MODEL
TM14-20RH/RP
TM20-20RH/RP
TM20-30RH/RP

COLOR MONITOR

SERVICE MANUAL

Ikegami

INFORMATION TO USER FOR FCC

Warning – *This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications.*

It has been tested with a class A computing device and found to comply with the limits for a Class A computing device in accordance with the specifications in subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

SAFETY PRECAUTIONS

1. Comply with caution and safety related notes located on the shield case in the receiver.

2. **WARNING**
   Any alteration should not be made in the design or circuitry of this receiver.
   Any design alterations or additions may alter the safety characteristic of this receiver and potentially create a hazardous situation for the user.
   Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.

3. **CRT**
   The picture tube in this receiver employs integral implosion protection. Replace with a tube of the same type number for continued safety.

4. **X-RADIATION AND HIGH VOLTAGE LIMITS**
   The primary source of potential X-radiation in solid state receivers is the picture tube.
   The picture tube is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement tube must be the same type as the original.
   The shields and mounting hardware for picture tubes have an X-radiation protection function and must be properly in place.
   High voltage must be checked each time any service is required that involves B+, horizontal deflection or high voltage.
   Where used, X-radiation protection circuits must be checked for proper operation each time the X-radiation protection circuit is serviced.
   Refer to the warning label on the shield case in the receiver and the schematic in the manual and, where used, X-radiation protection circuits specifications.
   High voltage is maintained within specified limits by the use of close tolerance safety related components /adjustments in the high voltage circuit. If high voltage exceeds specified limits, check each component specified on the schematic diagram and take necessary corrective action.

5. **PRODUCT SAFETY NOTICE**
   Many electrical and mechanical parts is receiver sets have special safety-related characteristics. There characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.
   Replacement parts which have these special safety characteristics are identified in this manual.
   Electrical components having such features are identified by (*) on the parts list and the schematic diagram in this manual.
   The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in this manual may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time.
For the latest information always consult the current **Ikegami** Service Data. A subscription to, on additional copies of, **Ikegami** Service Data may be obtained at a nominal charge from **NY-Ikegami.**

MODEL

TM14-20RH/RP
TM20-20RH/RP
TM20-30RH/RP

COLOR MONITOR

SERVICE MANUAL

Contents

003

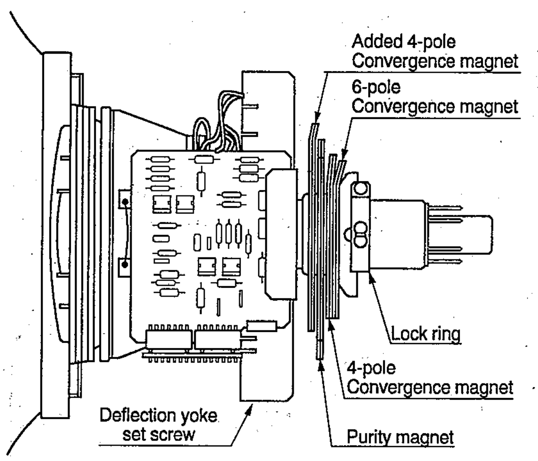
005

Maintenance Adjustment

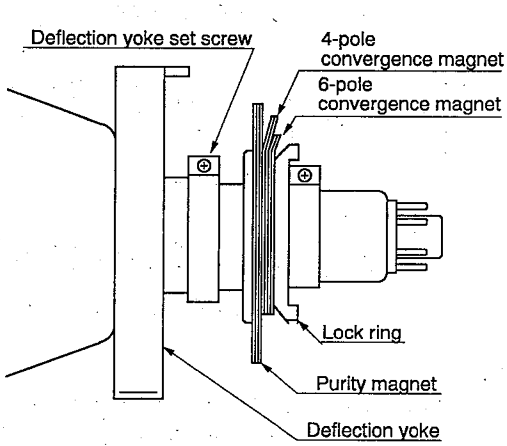
When the specified performance can no longer be obtained with the adjusters on the front panel or when parts have been replaced due to a malfunction, perform adjustment of the following parts.

When adjusting the board inserted into the slot section, use the EXTENDER BOARD(option).

1. MAIN CHASSIS



TM20-30RH/RP



TM14-20RH/RP
TM20-20RH/RP

(1) Purity Adjustment

① Select the "FLAT FIELD" with the TEST switch.

② Press the DEGAUSS switch to demagnetize the magnetized shadow mask.

③ Set the raster of the screen to a single green color with the SCREENS switches. (When the "SCREEN" mode of MENU 4 is the "MODE 1", set only the G.SCREEN switch to "ON" position, and when the "SCREEN" mode is the "MODE 2", set the R.SCREEN and B.SCREEN switches to "ON" position.)

④ Loosen the deflection yoke set screw, remove the silicon which holds the deflection yoke and CRT, and slide the deflection yoke all the way back.

⑤ Loosen the lock ring which holds the magnets.

⑥ Adjust the two purity magnets alternately so that there are green vertical lines at the center of the screen.

⑦ While watching the screen, slide the deflection yoke forward so that the screen is an even green color. If the screen does not become an even green color, perform adjustment again from step ④.

⑧ Set to blue and red, and confirm that the screen is a single color.

⑨ Set to white raster and if there is partial coloring of the raster, slightly shift the position of the deflection yoke either forward or back.

⑩ After completing adjustment, tighten the deflection yoke set screw and lock ring.

(2) Convergence Adjustment

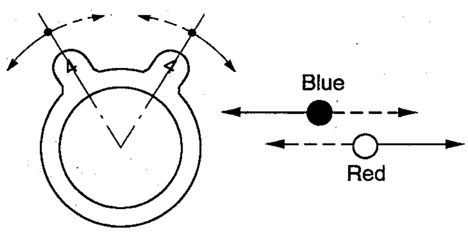
Before performing convergence adjustment, allow the monitor to warm up for at least 30 minutes.
Select the "CROSS HATCH" with the TEST switch.

(a) Center convergence

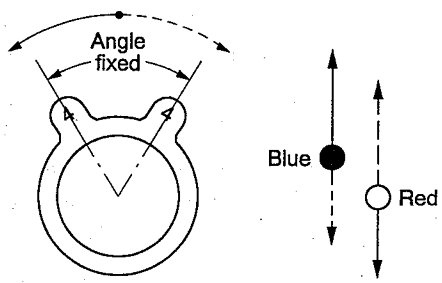
① Loosen the lock ring.

② Set the screen to red and blue with the [SCREENS] switch. (When the "SCREEN" mode of MENU 4 is the "MODE 1", set the [R.SCREEN] and [B.SCREEN] switches to "ON" position, and when the "SCREEN" mode is the "MODE 2", set only the [G.SCREEN] switch to "ON" position.)

③ While paying attention to the cross section in the center of the screen, adjust the angle of the two 4-pole magnets(TM14/20-20RH/RP) or the angle of the two added 4-pole magnets(TM20-30RH/RP) as shown below to adjust the shifting of the vertical blue and red lines.

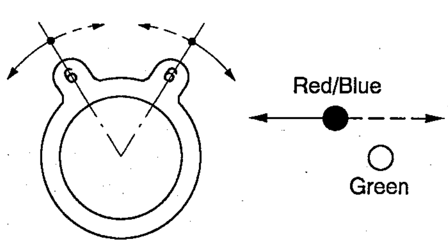


④ With the angle of step ③ remaining, rotate the two magnets simultaneously to adjust the shifting of the horizontal lines.

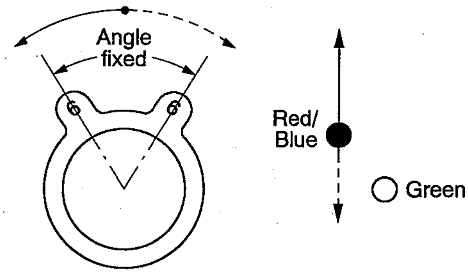


⑤ Set all the [SCREENS] switch to "OFF" position, and set to white screen.

⑥ Adjust the angle of the two 6-pole magnets and adjust shifting of the red and blue vertical lines and green vertical lines.



⑦ With the angle of step ⑥ remaining, rotate the two magnets simultaneously to adjust the shifting of the horizontal lines.

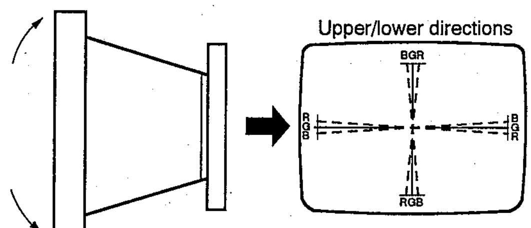


⑧ Tighten the rock ring after completing adjustment of the center convergence.
If there is poor peripheral convergence, perform the adjustment described in following *(b)*.

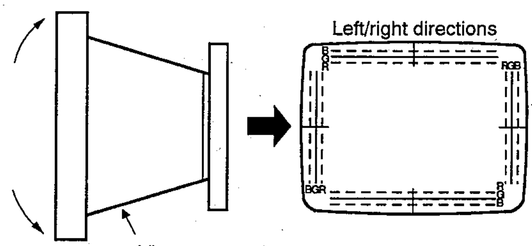
(b) Peripheral convergence

① Slightly loosen the deflection yoke set screw.

② Move the deflection yoke up, down, and to the left and right as shown below to adjust peripheral shifting.

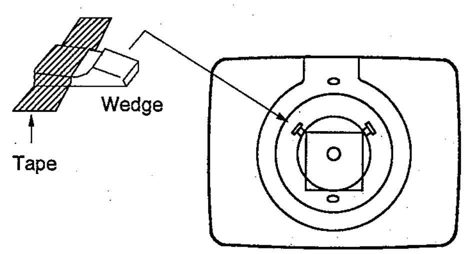


View as seen from side of deflection yoke.



View as seen from top of deflection yoke.

③ After the completion of adjustment, insert wedges into the space between the deflection yoke and CRT as shown below to fully lock the deflection yoke set screw.



View as seen from back of CRT

(3) Replacement of CRT

As the CRT for this monitor is supplied with the deflection yoke already attached, there is no need to readjust the purity and convergence.
Replacement of the CRT is performed in the following manner.

(a) For TM14-20RH/RP

① Remove the four screws which hold the top cover, and remove the cover.

② Remove the four screws each which hold the right and left covers, and remove the covers.

③ Remove the anode cap of the CRT.

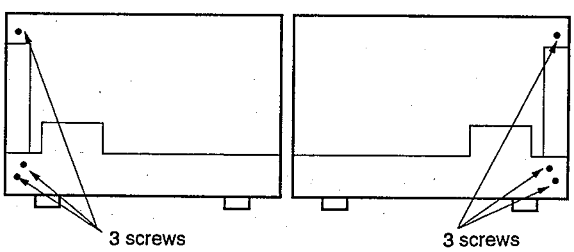
④ Remove the CRT SOCKET BOARD from the CRT.

⑤ Remove the deflection yoke connector (CN901) on the DEF BOARD.

⑥ Pull out the FRONT RIGHT PANEL on the right side and remove the connector connected to the MOTHER BOARD at the FRONT RIGHT PANEL side. Remove the FRONT RIGHT PANEL from the main unit.

⑦ Remove the connector which connects the FRONT LEFT PANEL on the left side and the DEF BOARD at the FRONT LEFT PANEL side. Pressing the upper nail, remove the FRONT LEFT PANEL.

⑧ Remove the six screws (see below) which hold the main unit and escutcheon, and remove the CRT from the main unit together with the escutcheon.
Make sure that the neck of the CRT does not touch the main unit at this time.



Right side　　　Left side

⑨ Place the CRT on a stable surface with the escutcheon down.
Place a cloth below the escutcheon to prevent it from being damaged.
Remove the four screws which attach the escutcheon to the CRT and attach to the new CRT.

⑩ Reassemble the unit by following steps ① through ⑨ above in reverse order.

(b) For TM20-20/30 RH/RP

① Remove the four screws which hold the top cover, and remove the cover.

② Remove the anode cap of the CRT.

③ Remove the CRT SOCKET BOARD from the CRT.

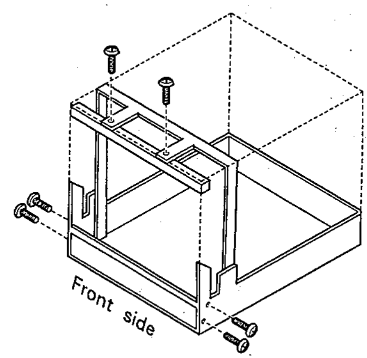
④ Remove the deflection yoke connector (CN901) on the DEF BOARD.

⑤ Remove the connector connected to the LED BOARD on the upper of the CRT.

⑥ Pull out the FRONT PANEL and remove the connector connected to the MOTHER BOARD at the FRONT PANEL side. Remove the FRONT PANEL from the main unit.

⑦ Remove the screw which holds the FRONT LEFT PANEL, pull out the FRONT LEFT PANEL, remove the two connectors connected at the FRONT LEFT PANEL side, and remove the FRONT LEFT PANEL.

⑧ Remove the six screws(see below)which hold the main unit and escutcheon, and remove the CRT from the main unit together with the escutcheon.
Make sure that the neck of the CRT does not touch the main unit at this time.



⑨ Perform steps ⑨ to ⑩ of section *(a)*.

(c) Readjustment Items after CRT Replacement

① Center adjustment of screen
Refer to section 5-4(7) of the OPERATION MANUAL.

② Adjustment of screen size
Refer to section 5-5(1) of the OPERATION MANUAL.

③ Adjustment of focus
Refer to section 5-4(3) of the OPERATION MANUAL.

④ Adjustment of white balance
Refer to section 5-4 (1) of the OPERATION MANUAL.

⑤ Adjustment of deflection linearity
Refer to section 3-1 (3) of the SERVICE MANUAL.

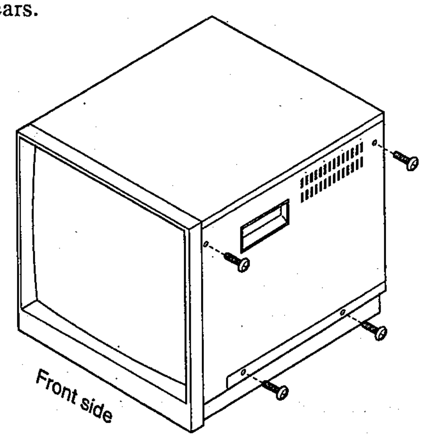
⑥ Adjustment of side pin
Refer to section 3-1 (3) of the SERVICE MANUAL.

(4) Replacement of Battery

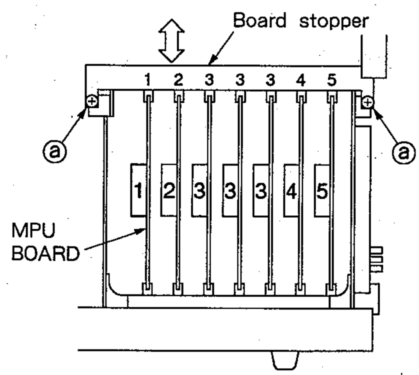
> Before changing the battery, because of preparing for the worst, display the "STATUS" screen of MENU 5 (refer to section 5-6(7) of the OPERATION MANUAL) and note each preset data at the last page of the OPERATION MANUAL. As there are three kinds of side in HEIGHT snd WIDTH by the scanning size, note each data.

① Set the POWER switch on the FRONT PANEL to "OFF" position.

② Remove the four screws which hold the right side cover, and remove the cover. The SLOT section appears.

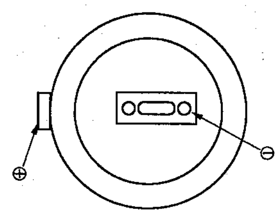


③ Loosen the screw shown by ⓐ below so that the board stopper can be moved, and lift up the board stopper upward.
Tighten the screw of ⓐ to hold the board stopper in that place.



④ Set the POWER switch to "ON" position. So the C125 capacitor on the MPU BOARD is charged.

⑤ Set the POWER switch to "OFF" position again.
At once, take out the MPU BOARD inserted into the SLOT No.1 and replace the BT101 battery with a new battery within four minutes.
Make sure that the battery is installed with the polarity aligned according to the marking on the board.
Replacing the battery within four minutes retains each data.

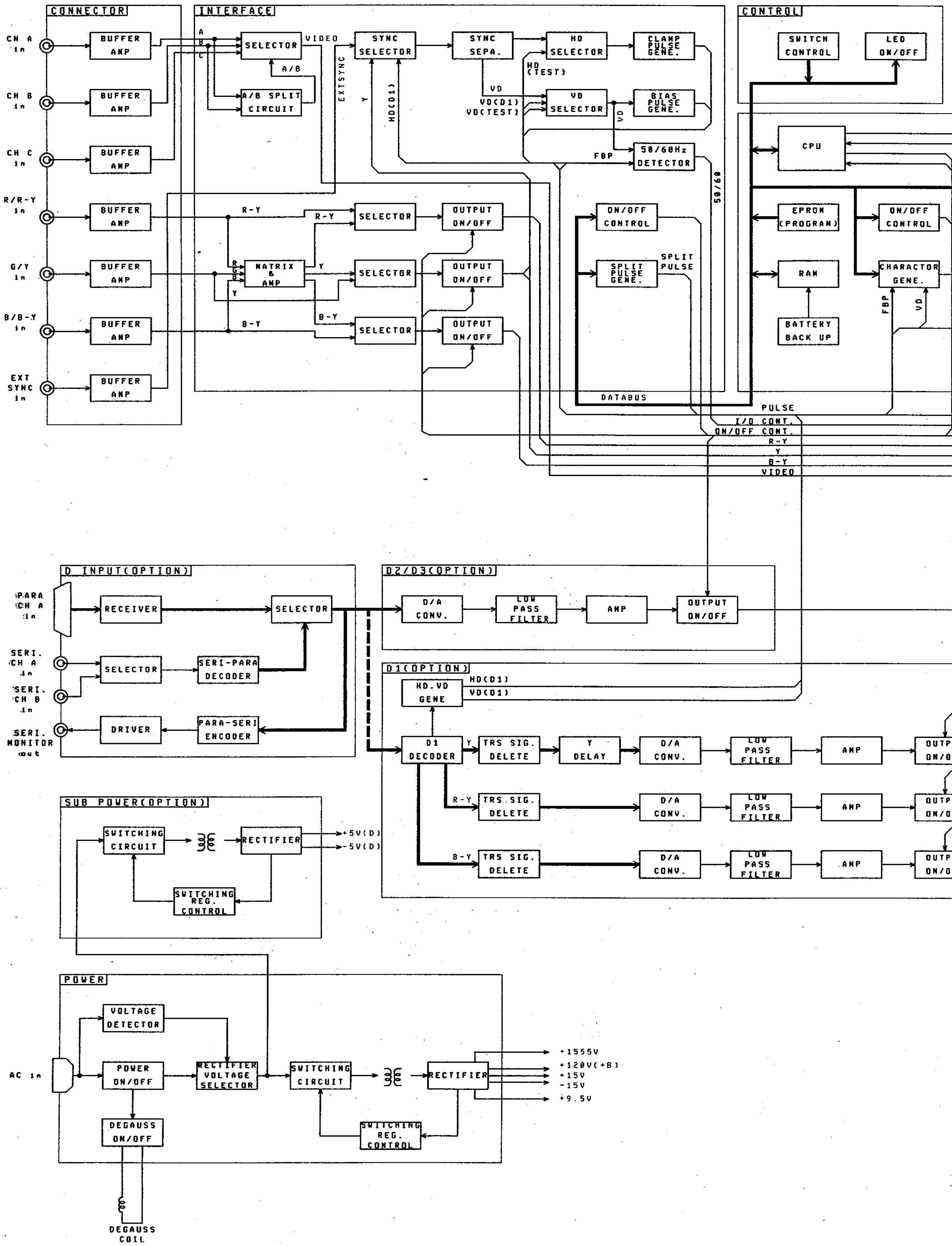


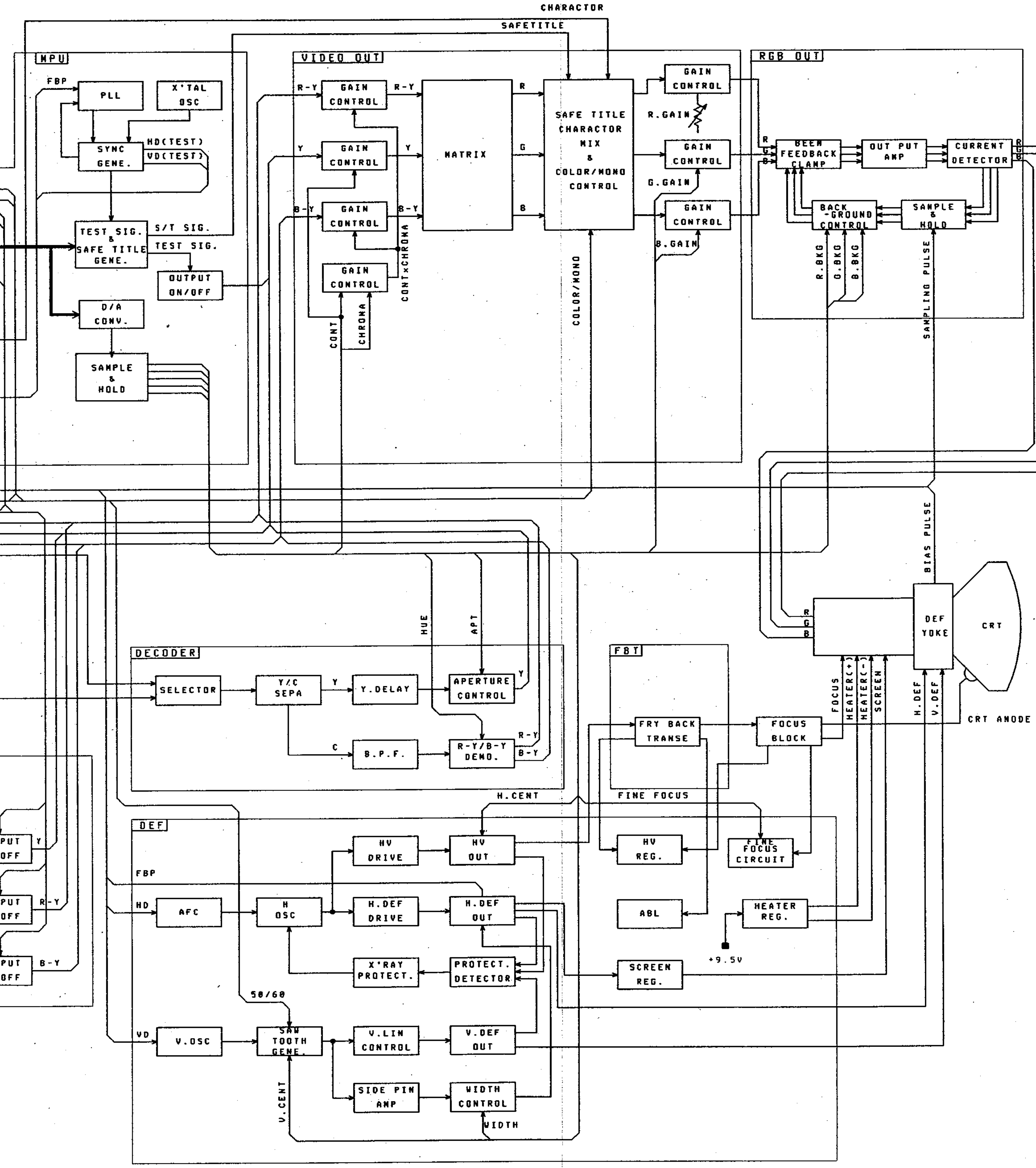
⑥ Insert the MPU BOARD into the SLOT No.1.

⑦ Set the POWER switch to "ON" position and confirm that the screen is normal.
When the screen does not appear normally, possible causes include accidental shorting of capacitor C125 for RAM data backup during battery replacement or more than four minutes were used for replacement of the battery and the RAM data was lost.
In this case, reset each preset data due to datas noted before battery replacement, and confirm each setting of the MENU.

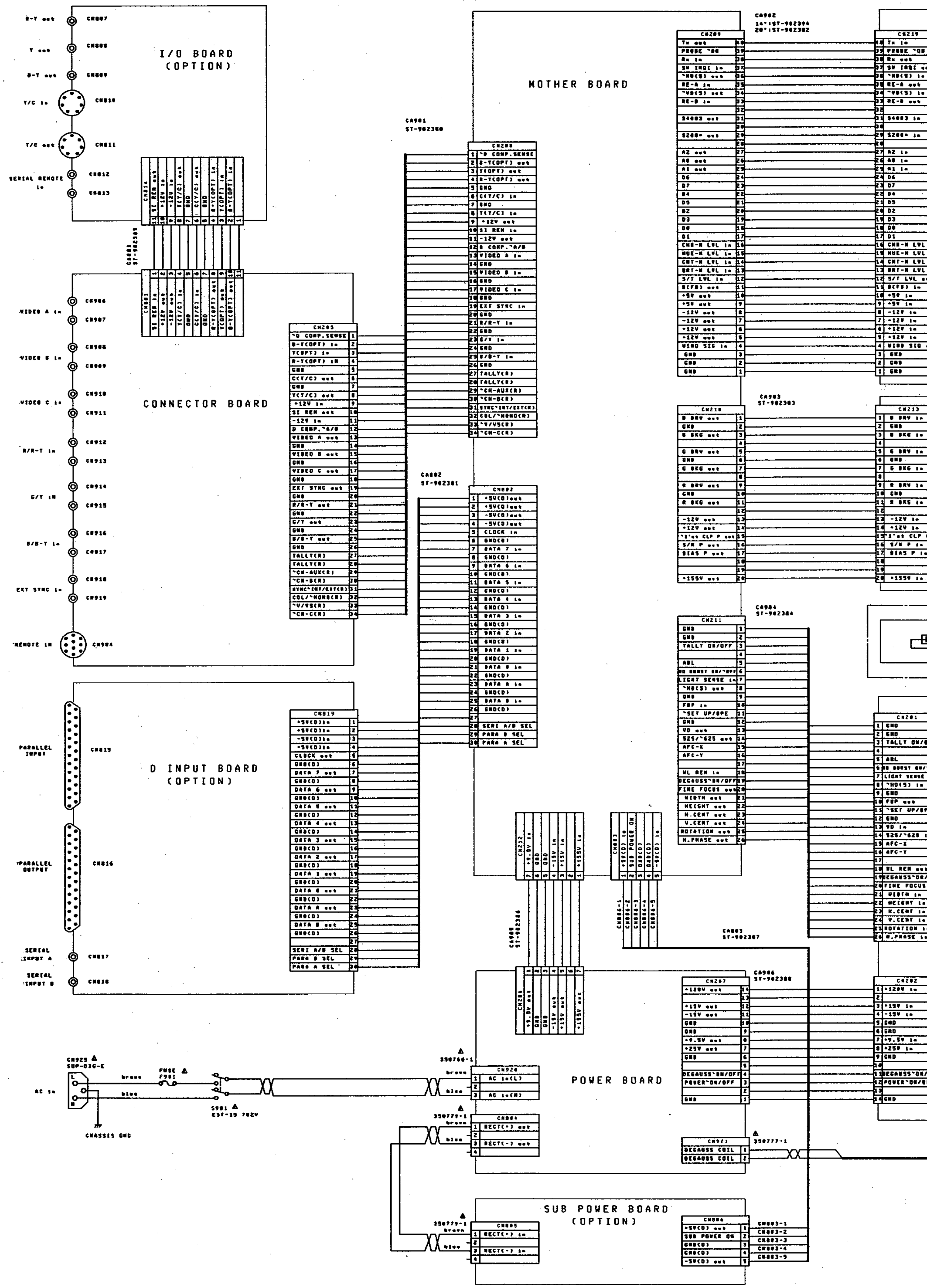
⑧ Reassemble the unit by following steps ② through ③ above in reverse order.

010

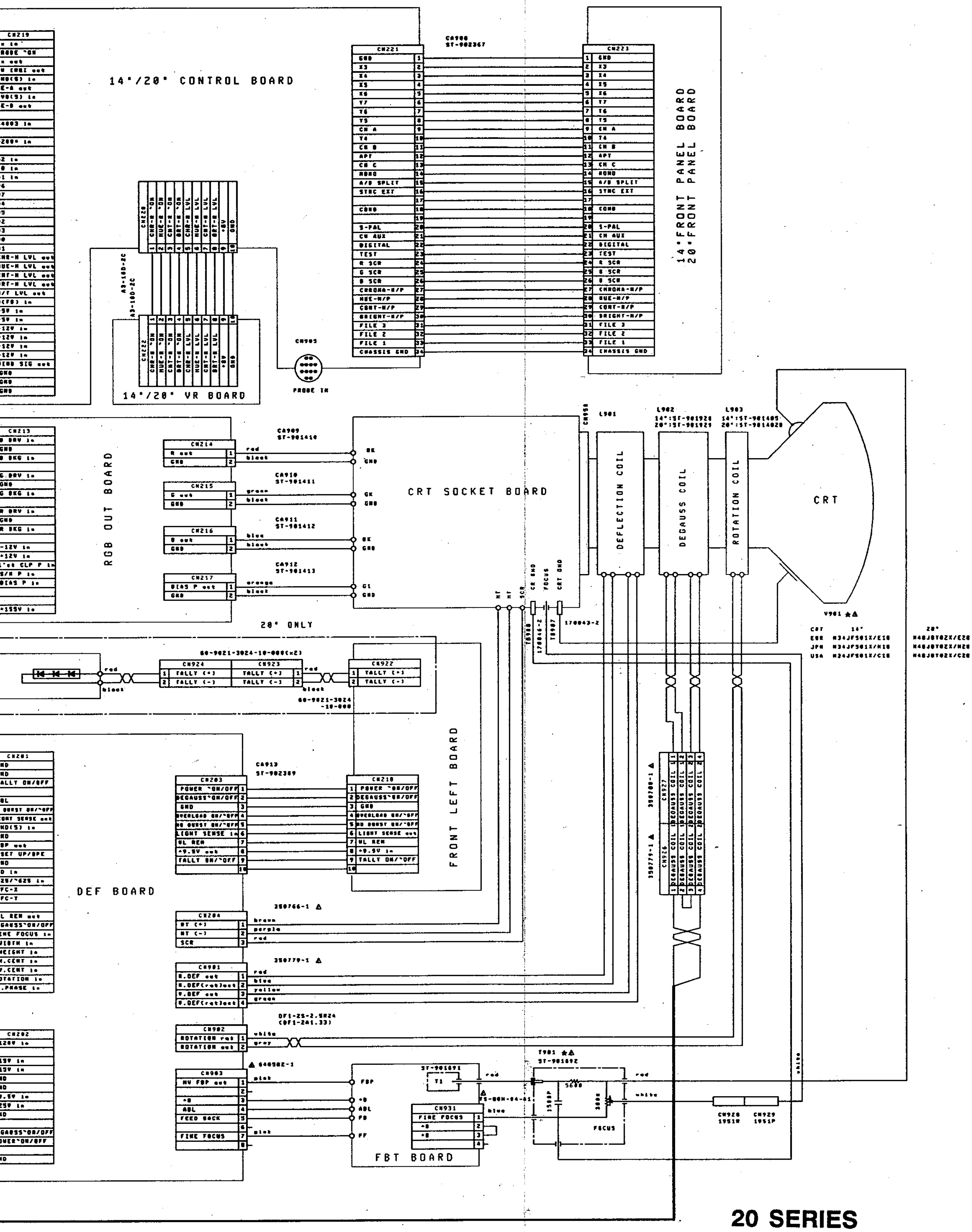

CONNECTOR
CH A in
CH B in
CH C in
R/R-Y in
G/Y in
B/B-Y in
EXT SYNC in
BUFFER AMP
INTERFACE
SELECTOR
VIDEO
A/B
A/B SPLIT CIRCUIT
EXTSYNC
SYNC SELECTOR
Y
HD(D1)
SYNC SEPA.
VD
VD(D1)
VD(TEST)
HD (TEST)
HD SELECTOR
VD SELECTOR
CLAMP PULSE GENE.
BIAS PULSE GENE.
FBP
50/60Hz DETECTOR
50/60
R-Y
Y
B-Y
MATRIX & AMP
OUTPUT ON/OFF
ON/OFF CONTROL
SPLIT PULSE GENE.
SPLIT PULSE
CONTROL
SWITCH CONTROL
LED ON/OFF
CPU
EPROM (PROGRAM)
RAM
BATTERY BACK UP
CHARACTOR GENE.
DATABUS
PULSE
I/O CONT.
ON/OFF CONT.
VIDEO
D INPUT(OPTION)
PARA CH A in
SERI. CH A in
SERI. CH B in
SERI. MONITOR out
RECEIVER
SERI-PARA DECODER
DRIVER
PARA-SERI ENCODER
D2/D3(OPTION)
D/A CONV.
LOW PASS FILTER
AMP
D1(OPTION)
HD.VD GENE
D1 DECODER
TRS SIG. DELETE
Y DELAY
SUB POWER(OPTION)
SWITCHING CIRCUIT
RECTIFIER
SWITCHING REG. CONTROL
+5V(D)
-5V(D)
POWER
AC in
VOLTAGE DETECTOR
POWER ON/OFF
RECTIFIER VOLTAGE SELECTOR
DEGAUSS ON/OFF
DEGAUSS COIL
+1555V
+120V(+B)
+15V
-15V
+9.5V



20/30 SERIES
COLOR MONITOR
GENERAL
Block Diagram
C2-904354



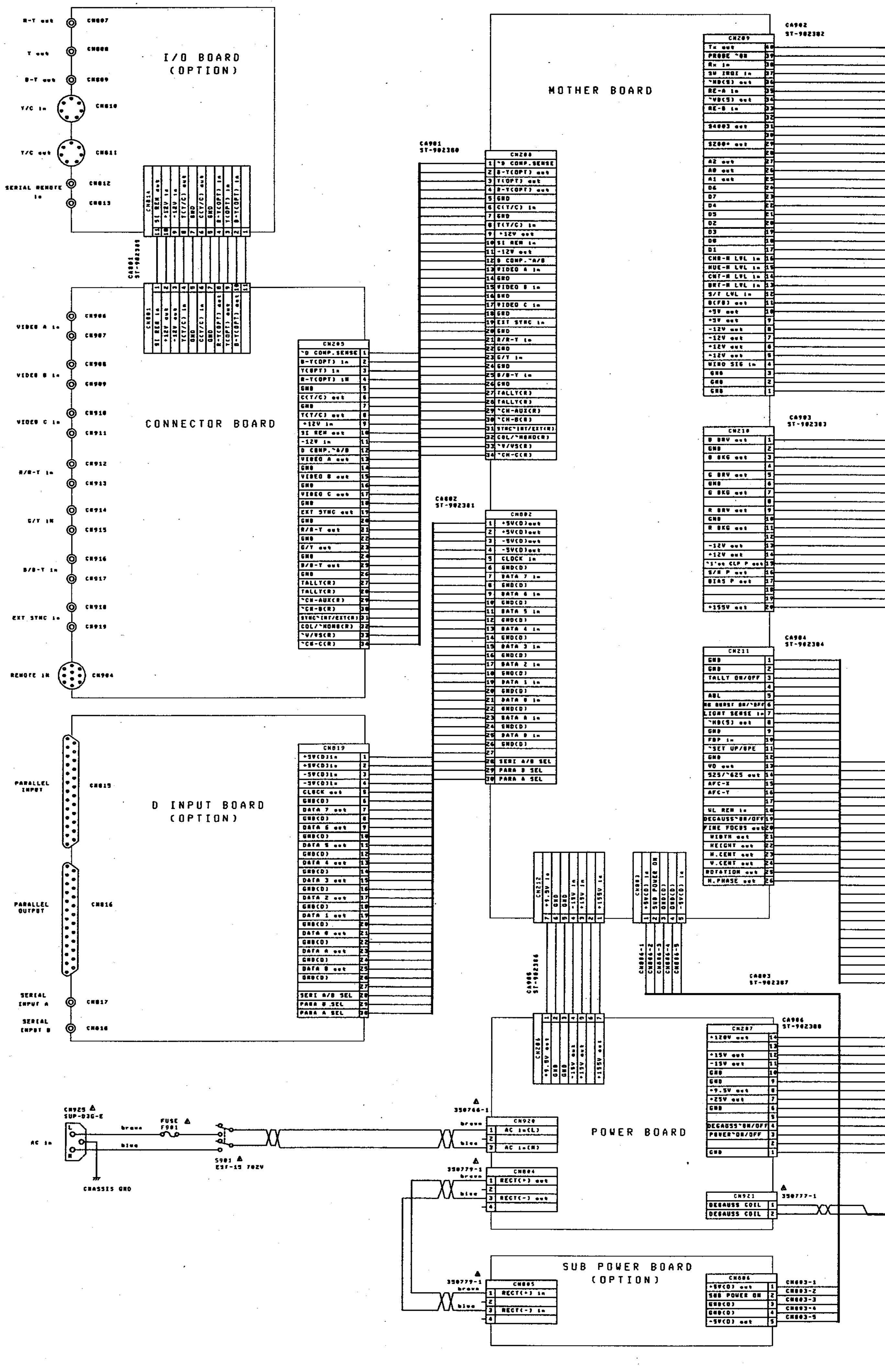
I/O BOARD
(OPTION)
CONNECTOR BOARD
D INPUT BOARD
(OPTION)
MOTHER BOARD
POWER BOARD
SUB POWER BOARD
(OPTION)
CN209
CN219
CN206
CN205
CN802
CN819
CN210
CN213
CN211
CN201
CN212
CN803
CN208
CN207
CN202
CN920
CN804
CN921
CN805
CN806
CN814
CN901
CA901
ST-902380
CA902
CA802
ST-902381
CA903
ST-902383
CA904
ST-902384
CA905
CA803
ST-902387
CA906
ST-902388
CN925
FUSE
F901
S901
AC in
CHASSIS GND
brown
blue
350766-1
350779-1
350777-1
DEGAUSS COIL

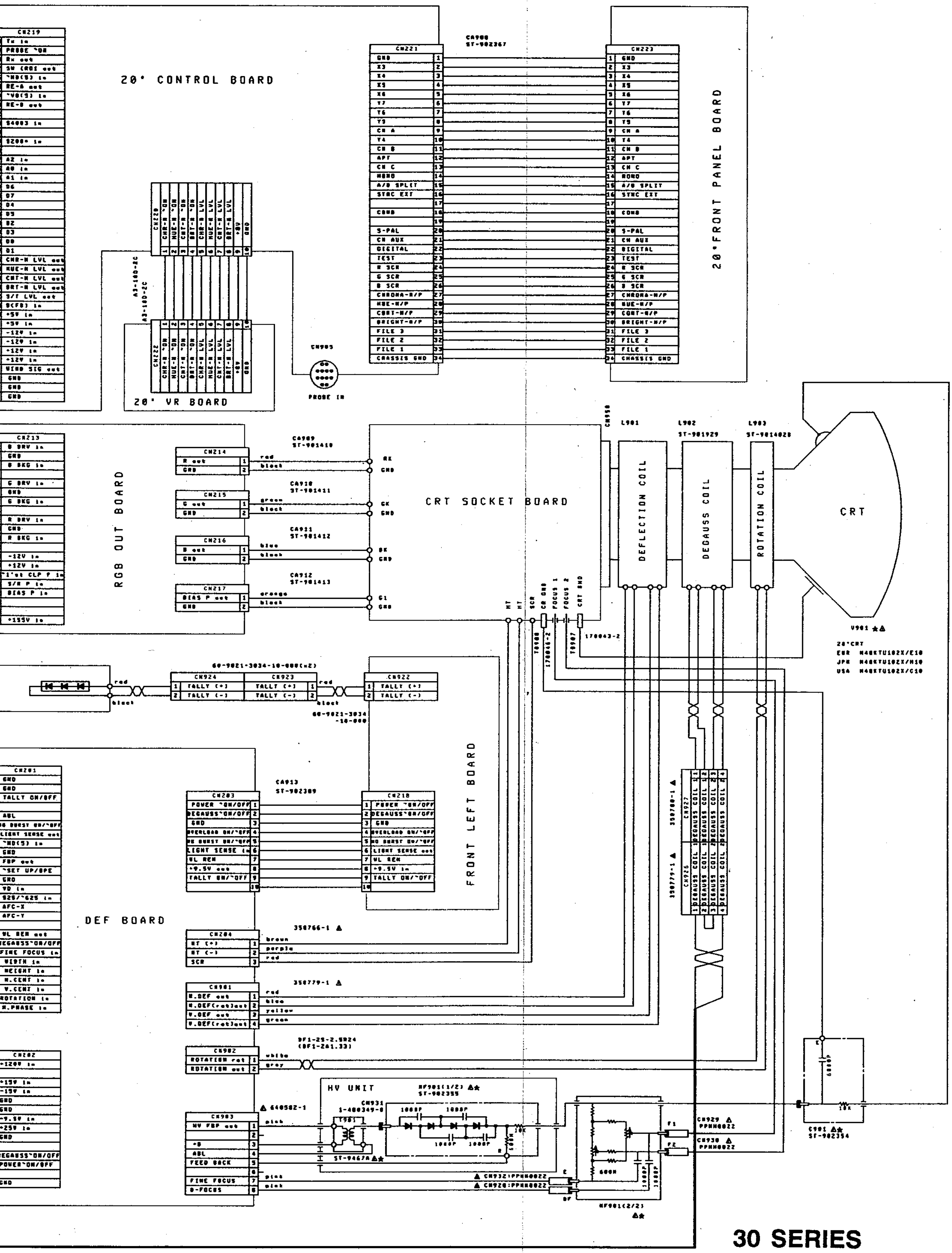


20 SERIES COLOR MONITOR MAIN CHASSIS

Schematic Diagram

C1-904260A


I/O BOARD
(OPTION)
MOTHER BOARD
CONNECTOR BOARD
D INPUT BOARD
(OPTION)
POWER BOARD
SUB POWER BOARD
(OPTION)
CA901
ST-902380
CA902
ST-902382
CA903
ST-902383
CA904
ST-902384
CA802
ST-902381
CN808
CN209
CN210
CN211
CN205
CN819
CN802
CN212
CN207
CN920
CN804
CN805
CN806
CN921
CN904
CN815
CN816
CN817
CN818
PARALLEL INPUT
PARALLEL OUTPUT
SERIAL INPUT A
SERIAL INPUT B
REMOTE IN
VIDEO A in
VIDEO B in
VIDEO C in
R/R-Y in
G/Y IN
B/B-Y in
EXT SYNC in
R-Y out
Y out
B-Y out
Y/C in
Y/C out
SERIAL REMOTE in
AC in
FUSE
F901
S901
brown
blue
CHASSIS GND
DEGAUSS COIL



30 SERIES
COLOR MONITOR
MAIN CHASSIS
Schematic Diagram
C1-904261A

2. VIDEO PROCESS

2-1. MOTHER BOARD

(1) Outline

The functions of this board is interfacing with the signal and control line between various boards.

(2) Adjustment Procedure

(a) VR1 (+12V ADJ)

① Connect the minus side of the voltmeter to TP4 and the plus side to TP1.

② Adjust VR1 so that the DC voltage is +12V.

(b) VR2(− 12V ADJ)

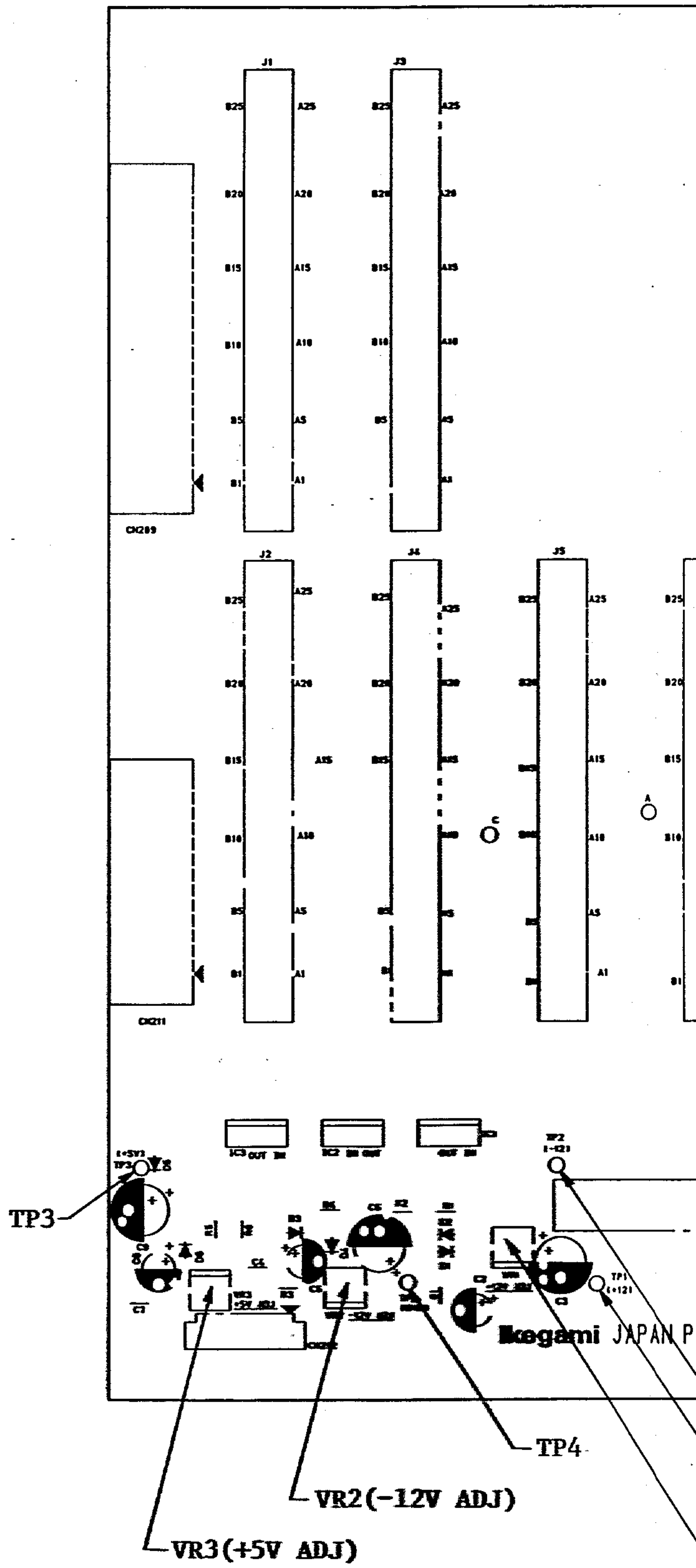
① Connect the plus side of the voltmeter to TP2.

② Adjust VR2 so that the DC voltage is − 12V.

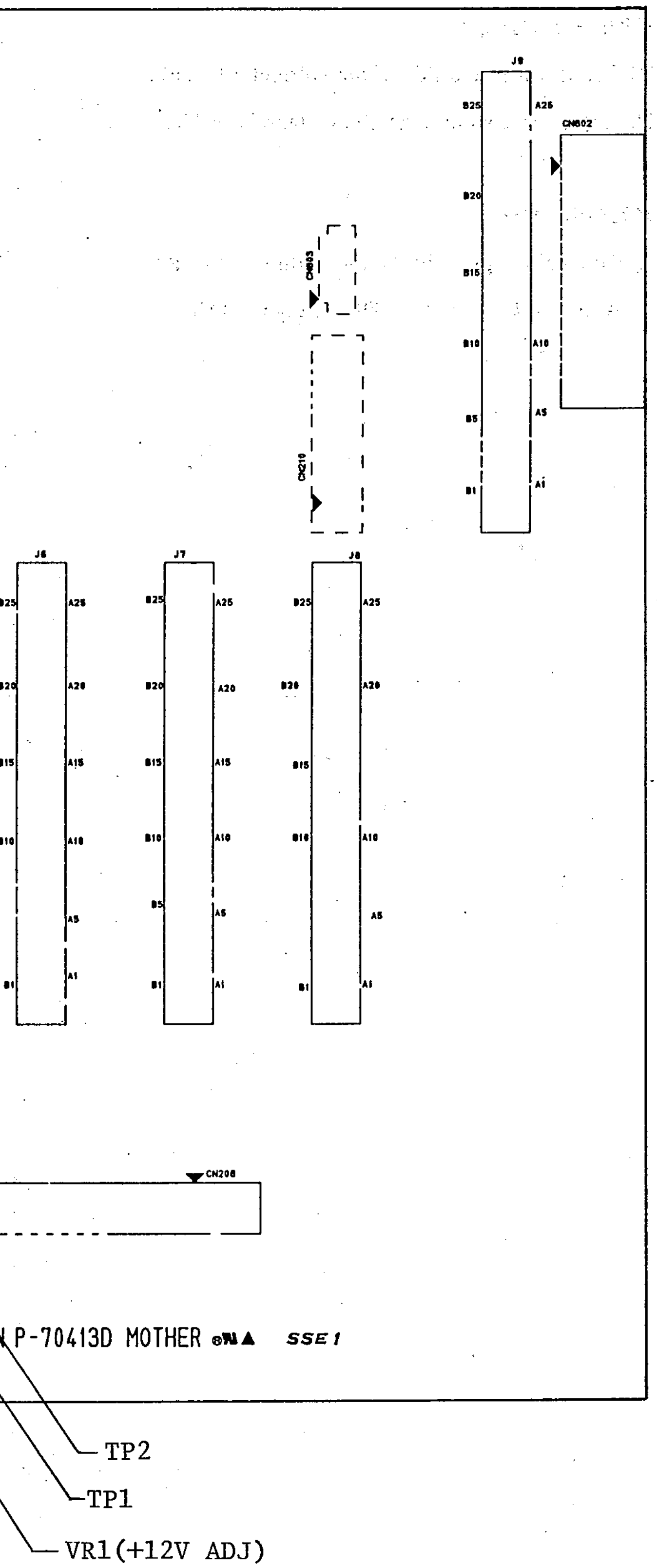
(c) VR3(+5V ADJ)

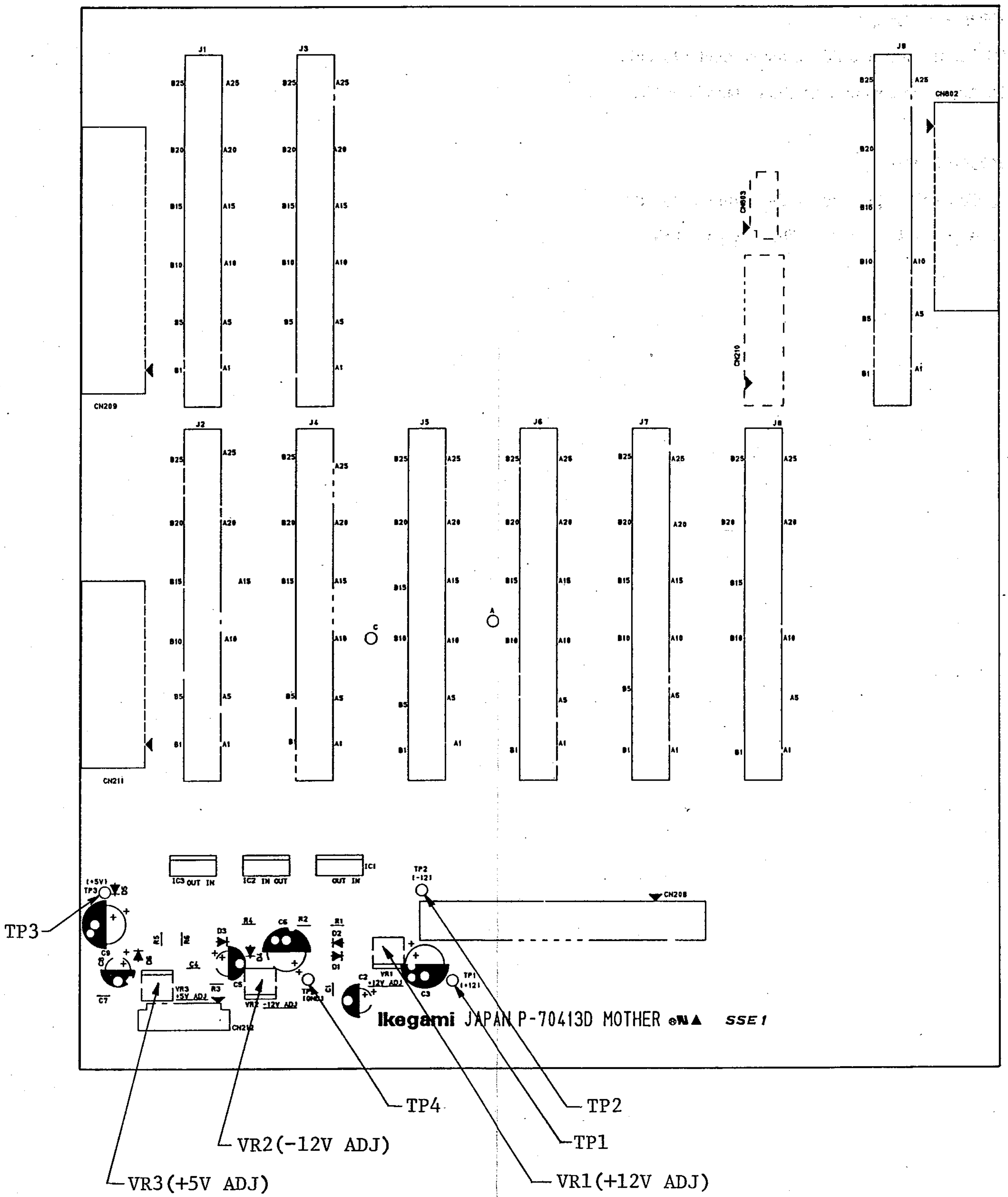
① Connect the plus side of the voltmeter to TP3.

② Adjust VR3 so that the DC voltage is +5V.

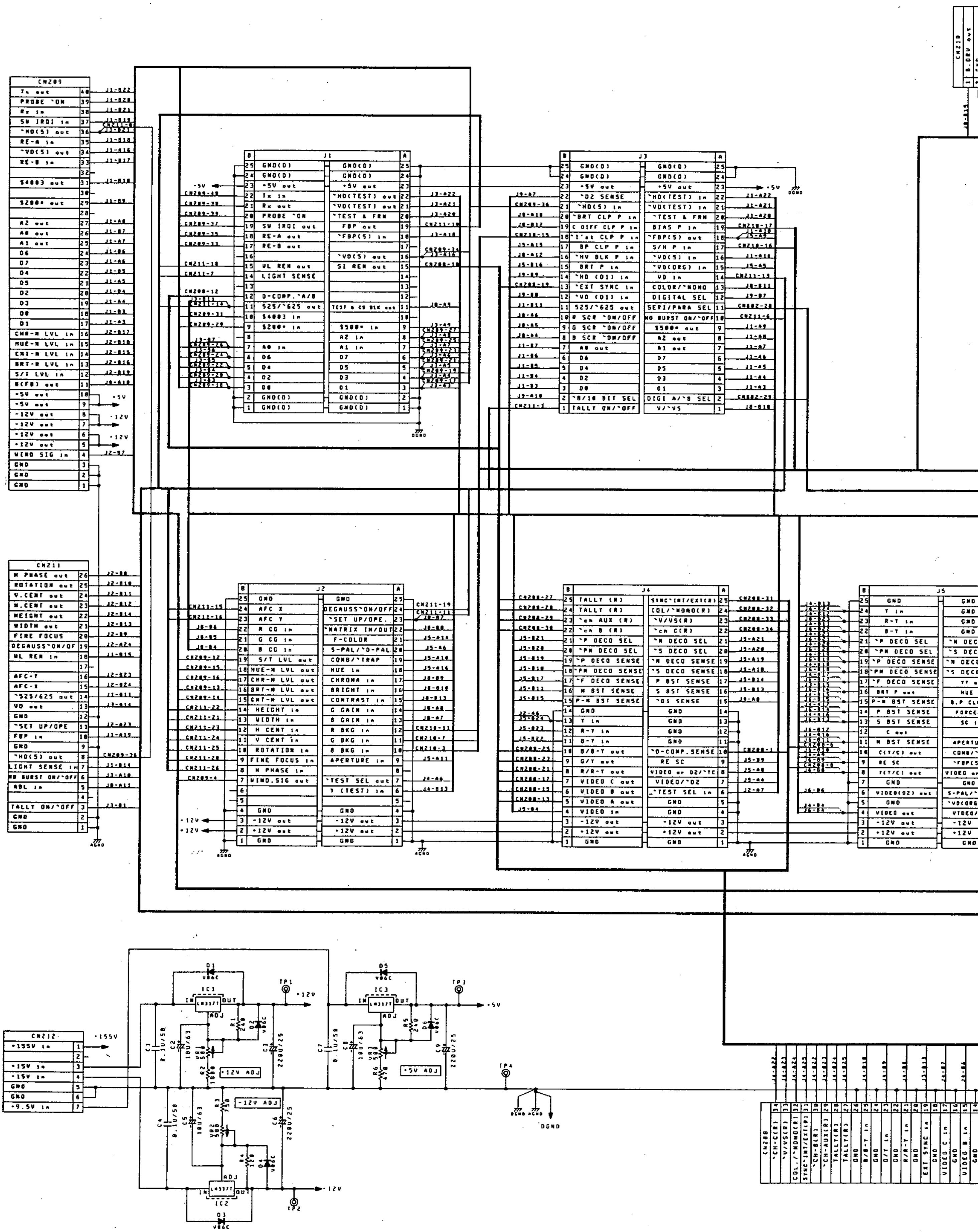


20/30 SERIES
MOTHER BOARD
PARTS LOCATION
P-70413D

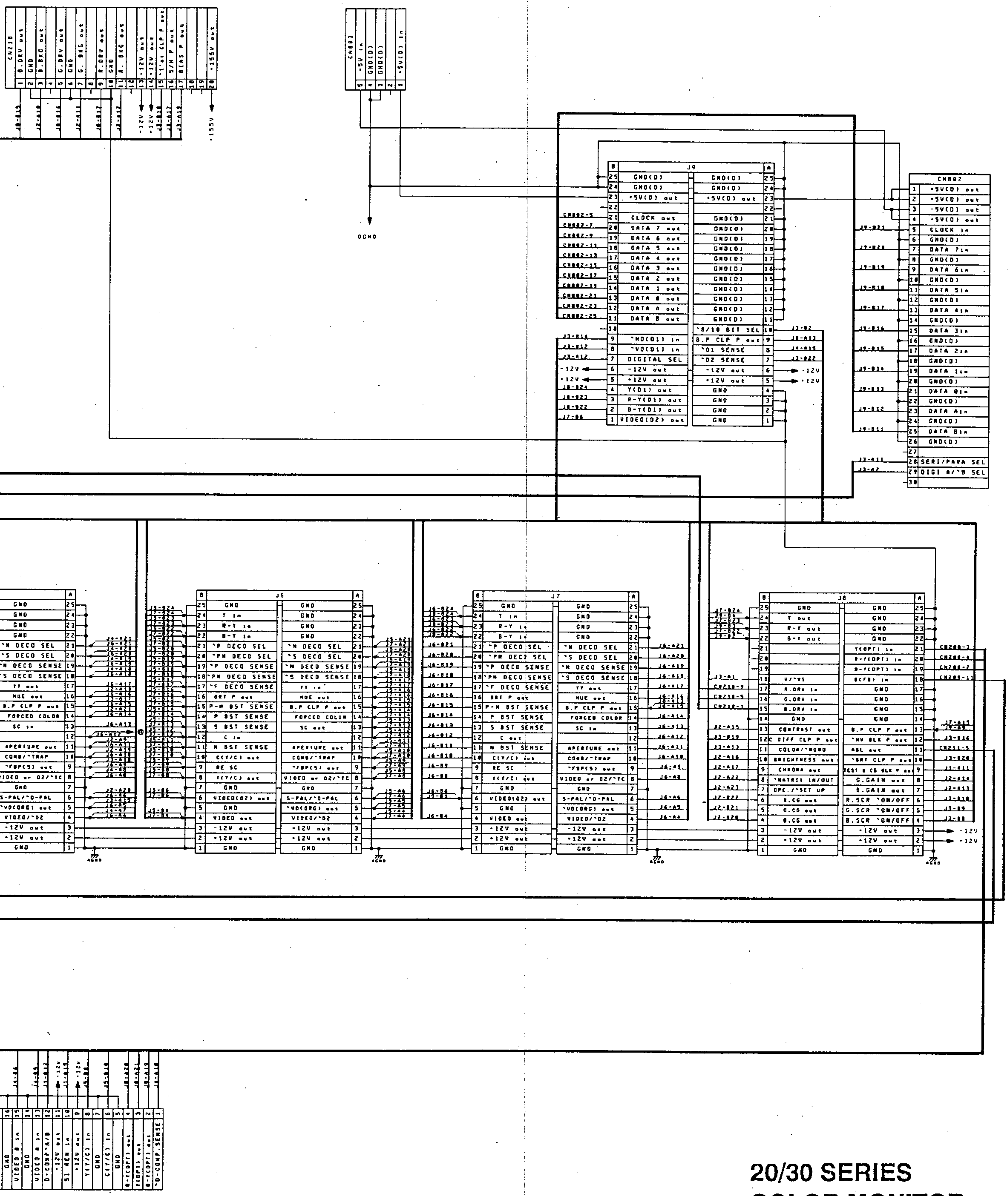

J9
CN602
CN603
CN210
J6
J7
J8
CN208
P-70413D MOTHER
SSE1
TP2
TP1
VR1(+12V ADJ)



TP3
TP4
TP2
TP1
VR2(-12V ADJ)
VR3(+5V ADJ)
VR1(+12V ADJ)
Ikegami JAPAN P-70413D MOTHER
SSE1
J1
J2
J3
J4
J5
J6
J7
J8
CN209
CN211
CN208
CN802
CN212
IC1
IC2
IC3



CN209
CN211
CN212
CN208
CN210
J1
J2
J3
J4
J5
IC1
IC2
IC3
+12V ADJ
-12V ADJ
+5V ADJ
TP1
TP2
TP3
TP4
+155V
+12V
-12V
+5V
DGND
AGND



20/30 SERIES
COLOR MONITOR
MOTHER BOARD
Schematic Diagram
C1-904207A

2-2. MPU BOARD 〈Fixed in SLOT No.1〉

(1) Outline

This board is provided for processing the digital control lines via the MOTHER BOARD from the CONTROL BOARD and generating the various test signals and character signals.

(2) Circuit Description

(a) MPU

The MPU(HD6303YF) of IC101 is an 8-bit CMOS microcomputer comprising CPU, timer, RAM (256 byte), SCI (Serial Communication Interface) and I/O on one chip.
The MPU is operated by a program memorized in the external EPROM IC105 (32kbyte). Each data is memorized in the static RAM IC106 (8kbyte).
The RAM is designed to hold data by a lithium battery BT101 when power is off.

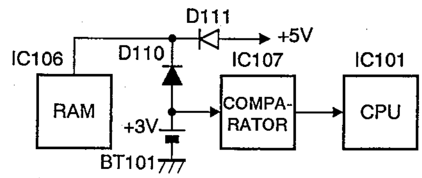
(b) Memory, I / O map

The respective addresses sent from MPU are transformed into address control lines by the address decoder of IC108 and IC109 and these control lines latch each input/output data of the data bus. The respective addresses are mapped in the memory as shown in the table below:

Address	LatchIC	Board used	Content
$0000 ~ $1FFF		MPU	S-RAM
$2000	IC9	CONTROL	LED ON/OFF OUTPUT
$2001	IC10		
$2002	IC11		
$2003	IC12		
$2004	IC13		
$2005	IC14		
$2006	IC4		SWITCH DATA INPUT
$2007	IC6		REMOTE NO. INPUT
$3000	IC112	MPU	CHARACTER IC CONTROL OUTPUT
$4000	IC208		SAFE TITLE PHASE CONTROL OUTPUT
$4001	IC210		SAFE TITLE, TEST SIGNAL SELECT OUTPUT
$4002	IC116		VARIOUS ON/OFF OUTPUT
$4003	IC7	CONTROL	MANUAL SWITCH DATA INPUT
$5000	IC10	INTERFACE	VARIOUS ON/OFF OUTPUT
$5001	IC11		VARIOUS DECODER BOARD SENSE INPUT
$5002	IC22		A/B, COLOR/MONO SPLIT PHASE OUTPUT
$5003	IC13		VARIOUS ON/OFF OUTPUT
$5004	IC12		VARIOUS DECODER BURST SENSE INPUT
$5005	IC28		PARALLEL REMOTE DATA INPUT
$5006	IC29		VIDEO SYSTEM ON/OFF OUTPUT
$5007	IC27		DIGITAL SYSTEM ON/OFF OUTPUT
$6000	IC118	MPU	D/A LOWER 8-BIT DATA OUTPUT
$7000	IC119		D/A HIGHER 2-BIT DATA OUTPUT, CHANGE DATA
$8000 ~ $FFFF			EP ROM

(c) RAM backup circuit

All digital control data are stored in the 8k byte static RAM (IC106) and held for about 10 years by a lithium battery (BT101).
When power to the monitor is on, D110 is off and D111 is on to supply 5V power to RAM.
When power to the monitor is off, D110 is on and D111 is off to supply 3V power (BT101) to RAM and the memory is held.
Output of IC107 (Comparator) is **"L"**, when the battery voltage is lower than 2.4V. The data is read by CPU and given as a message by blinking each screen LED on the front panel.

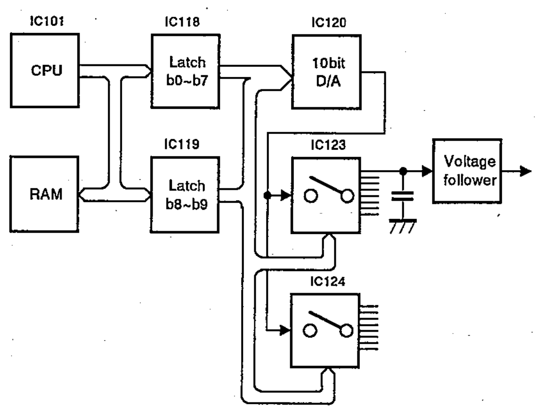


(d) TV display generator and SAFE TITLE color control

The TV display generator (IC113) operated by HD and VD outputs each character signal of R, G and B and a background signal by control with data from CPU. DC level that is preset with the SAFE TITLE LEVEL control in the pull-out panel controls 8 colors at IC114 by data sent from CPU.
A character signal and SAFE TITLE level are selected with the analog switch (IC115).

(e) D / A, S / H circuit

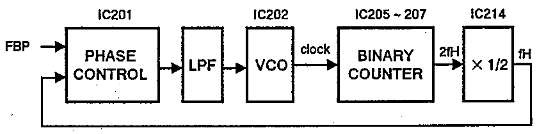
The lower 8-bit and higher 2-bit data are sent from RAM in twice. The respective data is latched at IC118 and IC119 and input to theD/A converter IC120 as 10 bit data. Since data are continuously sent, the analog multiplexers IC123 and IC124 are provided as circuits to separate these data. A sample & hold circuit is made by the ICs and the holding capacitors C139 ~ 155 to control each circuit by DC.



(f) ***SAFE TITLE PLL circuit***

The flyback pulse sent from DEF BOARD and HD that is made by using as a clock the pulse which is oscillating at VCO (IC202) are subject to phase comparison at Pins ① and ③ of IC201.

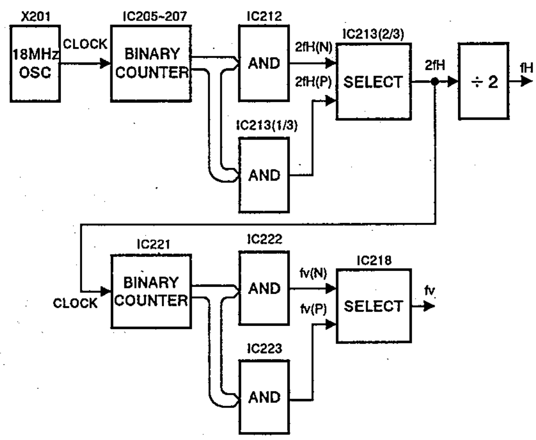
The phase difference passes through the low-pass filter to control the oscillation of VCO of IC202.



(g) ***Horizontal and vertical pulse generating circuit***

A crystal resonator (X201) of 18MHz is used as a base clock. The binary counter of IC205, IC206 and IC207 is operated by the crystal resonator. The AND circuit of IC212 for NTSC or of IC213 (1/3) for PAL serves to make a twofold horizontal pulse (2fH). The 2fH horizontal pulse is halved by D-flip-flop of IC214(1/2) to make a horizontal pulse fH.

To genarate a vertical pulse, the 2fH pulse is used as a clock to operate the binary counter of IC221. A vertical pulse(fv) is made by the AND circuit of IC222 for NTSC or of IC223 for PAL.



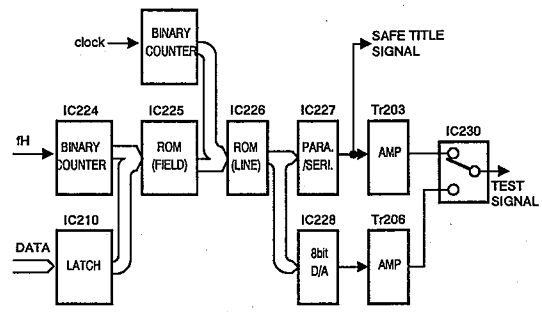
(h) ***TEST, SAFE TITLE signal generating circuit***

The test signal and the safe title signal are made by reading data of ROM (IC225, 226).

The EPROM IC226 serves to store pattern data equivalent to one line (64 byte) in each address, which is controlled by IC225. IC225 stores 27 kinds of address data on the vertical direction at a unit of one field (512 byte) to read the pattern of IC226.

Each data is selected by using addresses A9 ~ A13. The lower A0 ~ A8 addresses are counted up line by line with the binary counter of IC224 which uses HD as the clock.

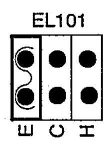
The signal data output from IC226 is divided into a signal that is subject to analog conversion by IC228 (8 bit D/A converter) and a signal that is subject to parallel- serial conversion for 8-bit digital data by IC227.



(3) Adjustment Procedure

(a) ***EL101***

① Set the short bar at the connector EL101 according to the phosphor of the CRT as follows.



	Destination
H	Japan
C	Ereas of NTSC format except for Japan
E	Ereas of PAL format

(b) ***VC201(TEST FREQUENCY)***

① Press the TEST switch to select a TEST signal.

② Connect the frequency counter to TP201.

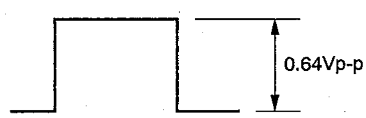
③ Adjust VC201 so that the frequency is 18.000MHz.

(c) ***VR201(TEST-S LVL)***

① Press the TEST switch to select the "FLAT FIELD" signal.

② Connect the probe to TP205.

③ Adjust VR201 so that the level is 0.64Vp-p.

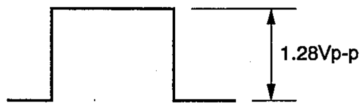


(d) ***VR202(DA LVL)***

① Press the TEST switch to select the "WINDOW" signal.

② Connect the probe to TP205.

③ Adjust VR202 so that the level is 1.28Vp-p.

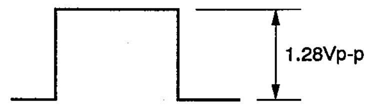


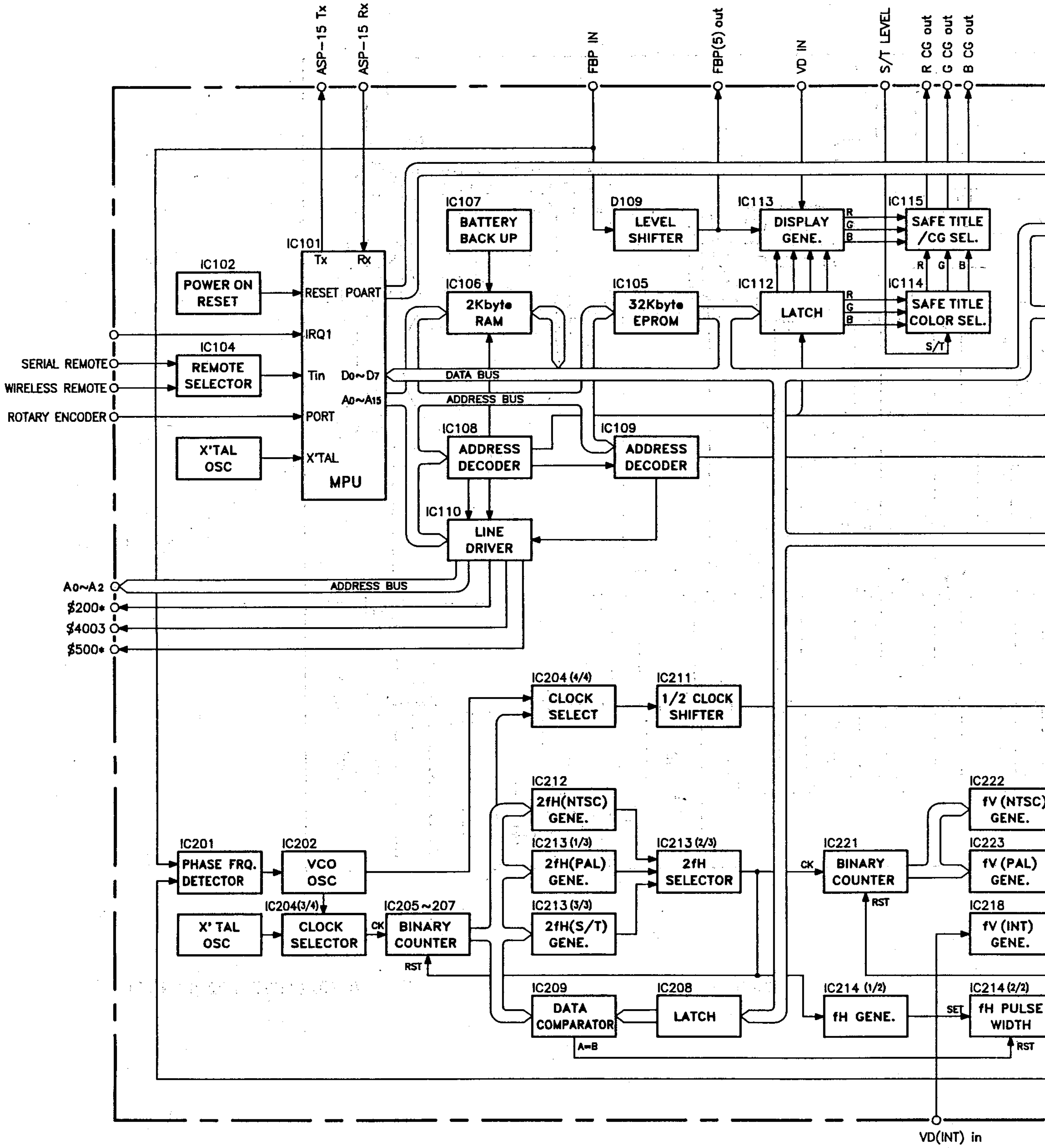
(e) VR203(WIND. LVL)

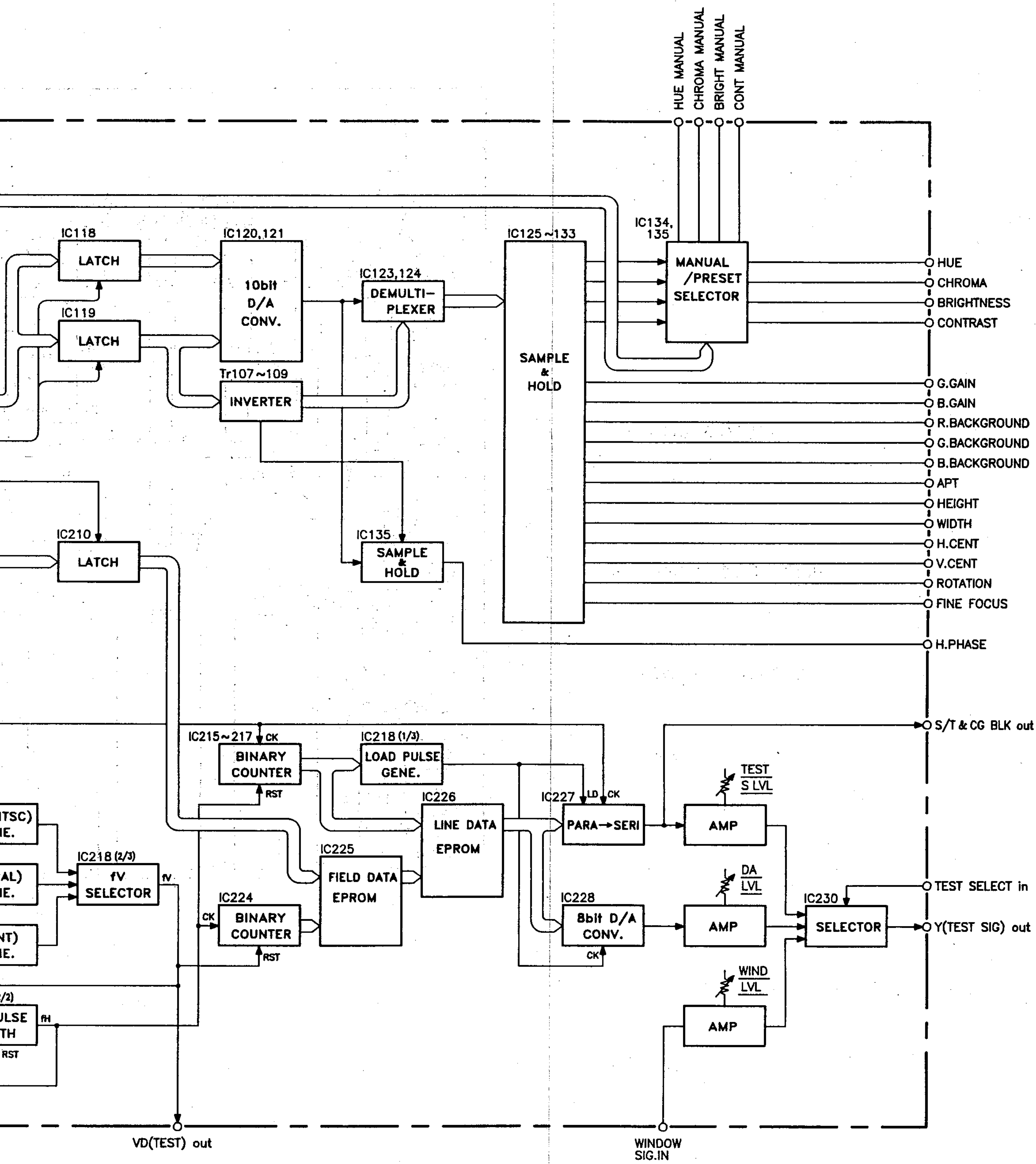
① Connect the AUTO SET UP PROBE(ASP-15) to the connector on the pull-out panel.

② Connect the probe to TP205.

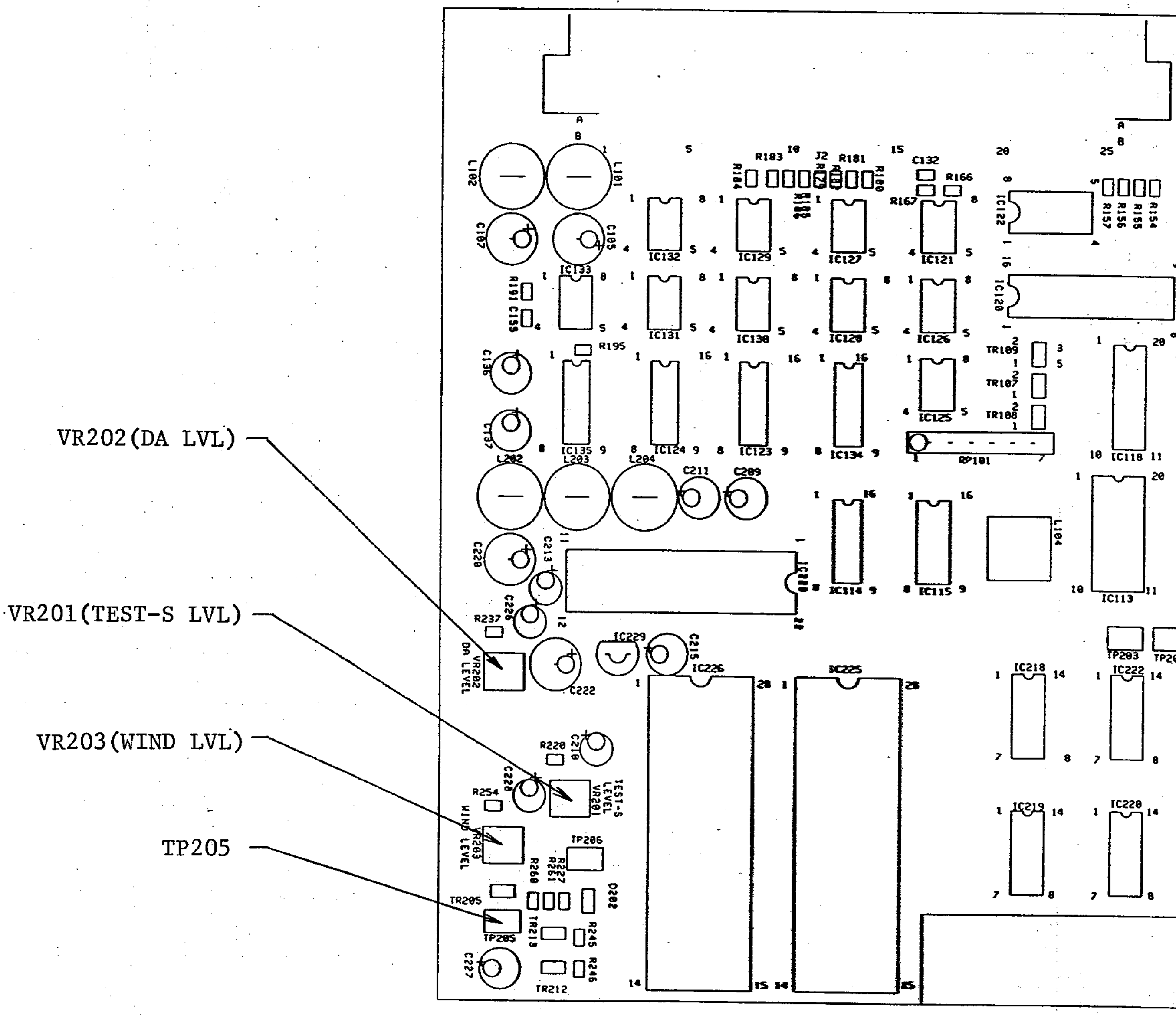
③ Adjust VR203 so that the level is 1.28Vp-p.



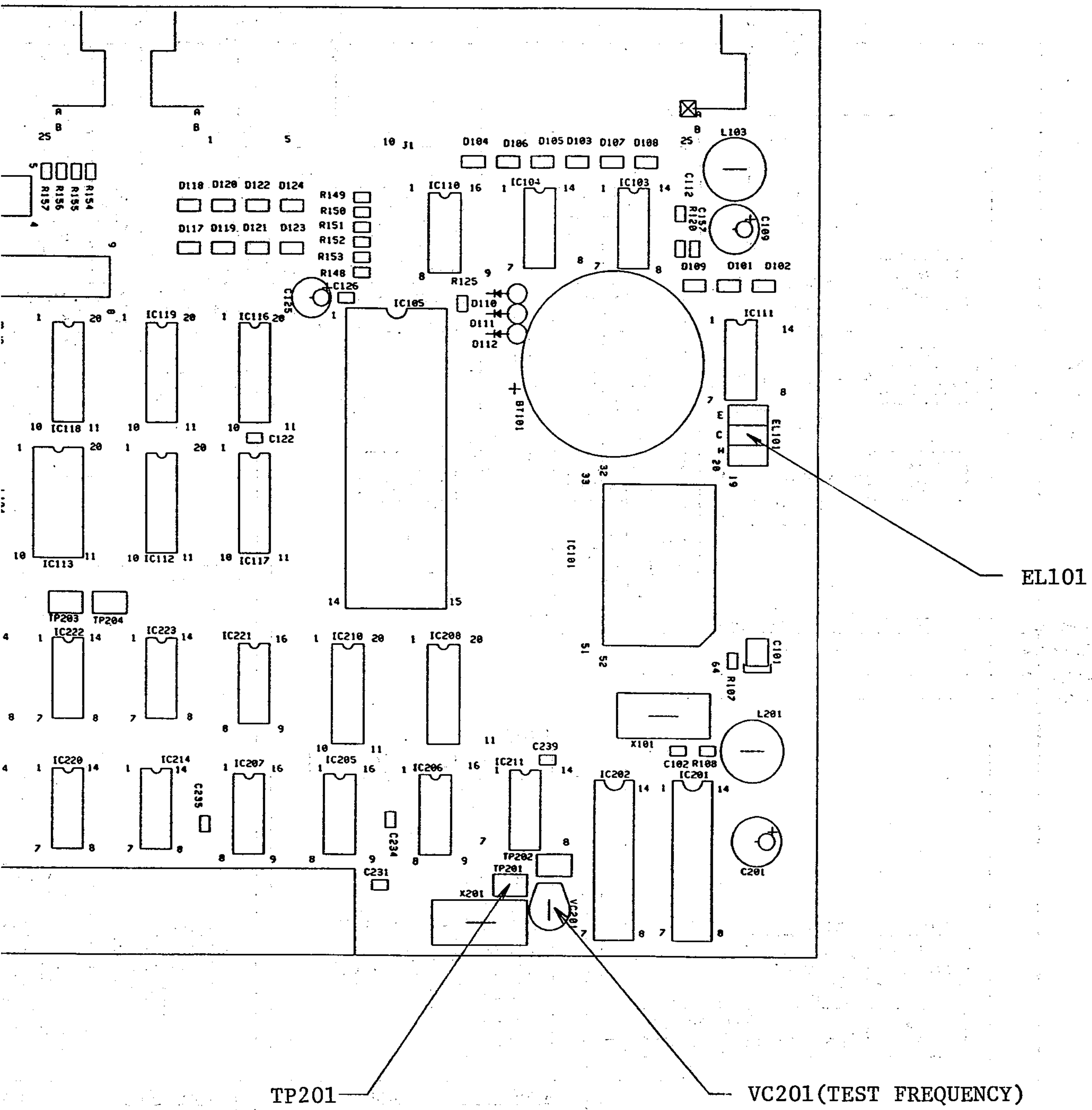

ASP-15 Tx
ASP-15 Rx
FBP IN
FBP(5) out
VD IN
S/T LEVEL
R CG out
G CG out
B CG out
IC107
BATTERY BACK UP
D109
LEVEL SHIFTER
IC113
DISPLAY GENE.
IC115
SAFE TITLE /CG SEL.
IC101
Tx
Rx
IC102
POWER ON RESET
RESET
POART
IC106
2Kbyte RAM
IC105
32Kbyte EPROM
IC112
LATCH
IC114
SAFE TITLE COLOR SEL.
S/T
IRQ1
IC104
SERIAL REMOTE
WIRELESS REMOTE
REMOTE SELECTOR
Tin
D0~D7
DATA BUS
A0~A15
ADDRESS BUS
ROTARY ENCODER
PORT
IC108
ADDRESS DECODER
IC109
ADDRESS DECODER
X'TAL OSC
X'TAL
MPU
IC110
LINE DRIVER
A0~A2
ADDRESS BUS
$200*
$4003
$500*
IC204 (4/4)
CLOCK SELECT
IC211
1/2 CLOCK SHIFTER
IC212
2fH(NTSC) GENE.
IC222
fV (NTSC) GENE.
IC201
PHASE FRQ. DETECTOR
IC202
VCO OSC
IC213 (1/3)
2fH(PAL) GENE.
IC213 (2/3)
2fH SELECTOR
IC221
CK
BINARY COUNTER
IC223
fV (PAL) GENE.
RST
IC204(3/4)
IC205~207
X' TAL OSC
CLOCK SELECTOR
CK
BINARY COUNTER
RST
IC213 (3/3)
2fH(S/T) GENE.
IC218
fV (INT) GENE.
IC209
DATA COMPARATOR
A=B
IC208
LATCH
IC214 (1/2)
fH GENE.
IC214 (2/2)
SET
fH PULSE WIDTH
RST
VD(INT) in



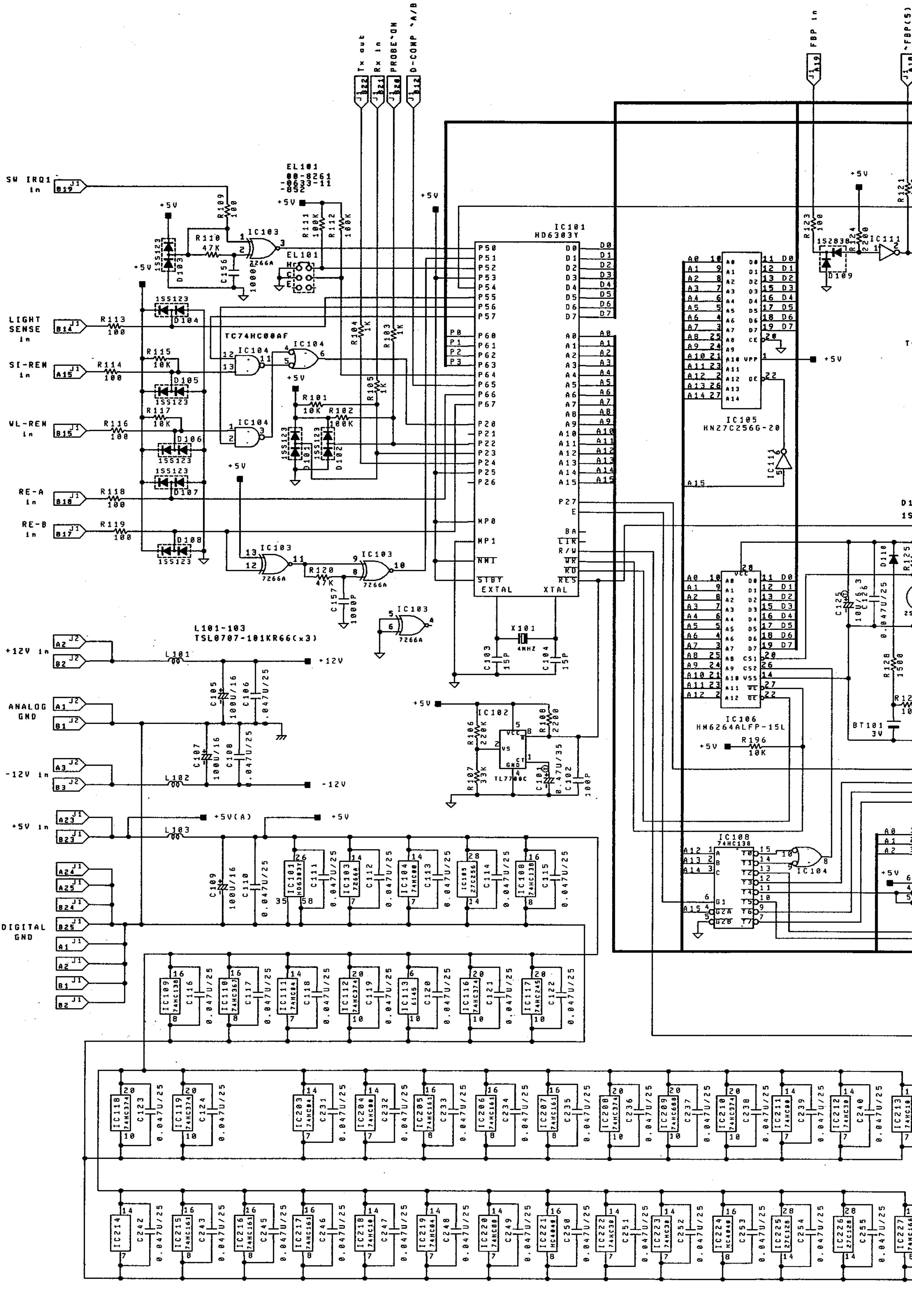
20/30 SERIES
COLOR MONITOR
MPU BOARD
Block Diagram
C2-904338



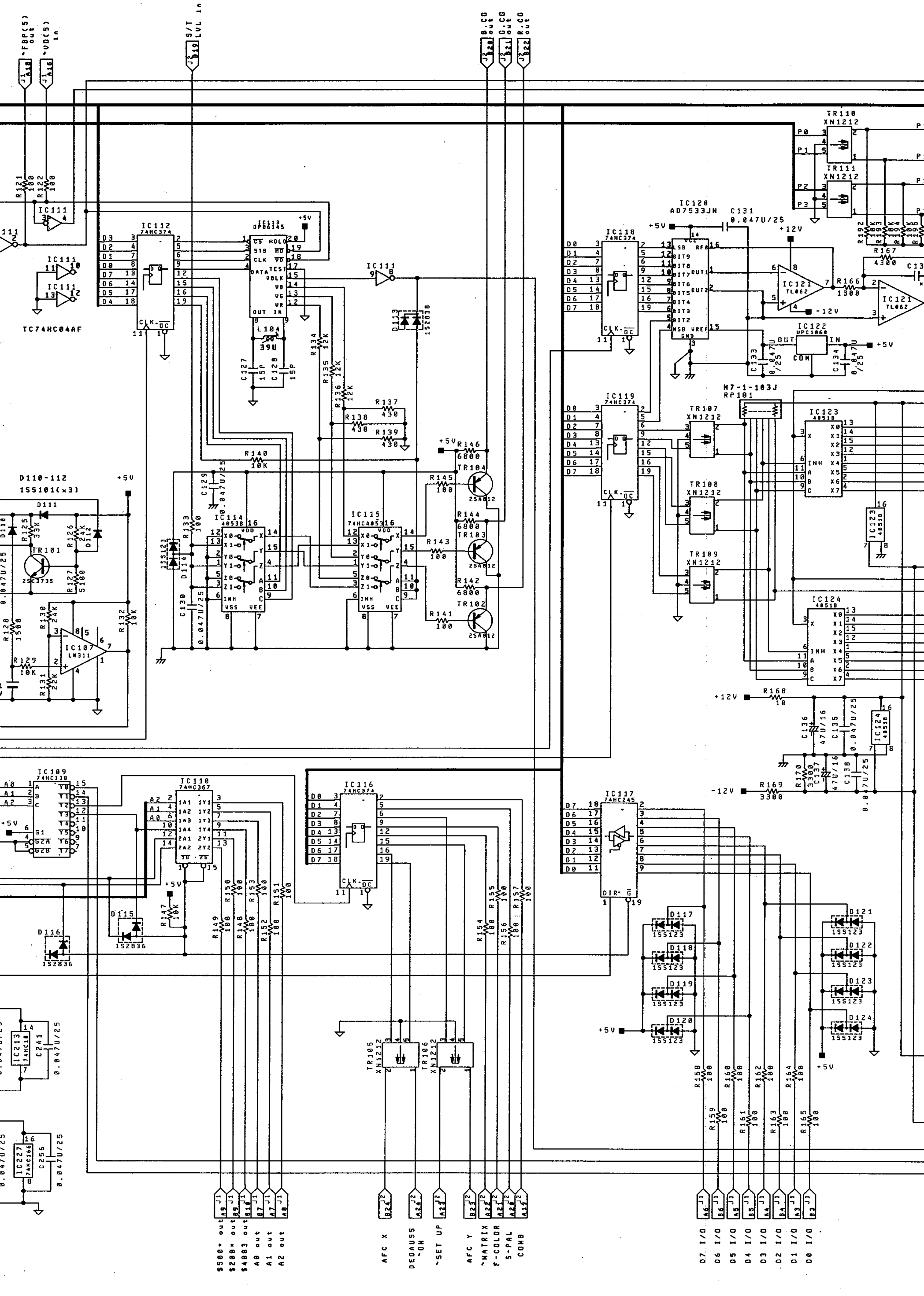
20
M
PA
PC



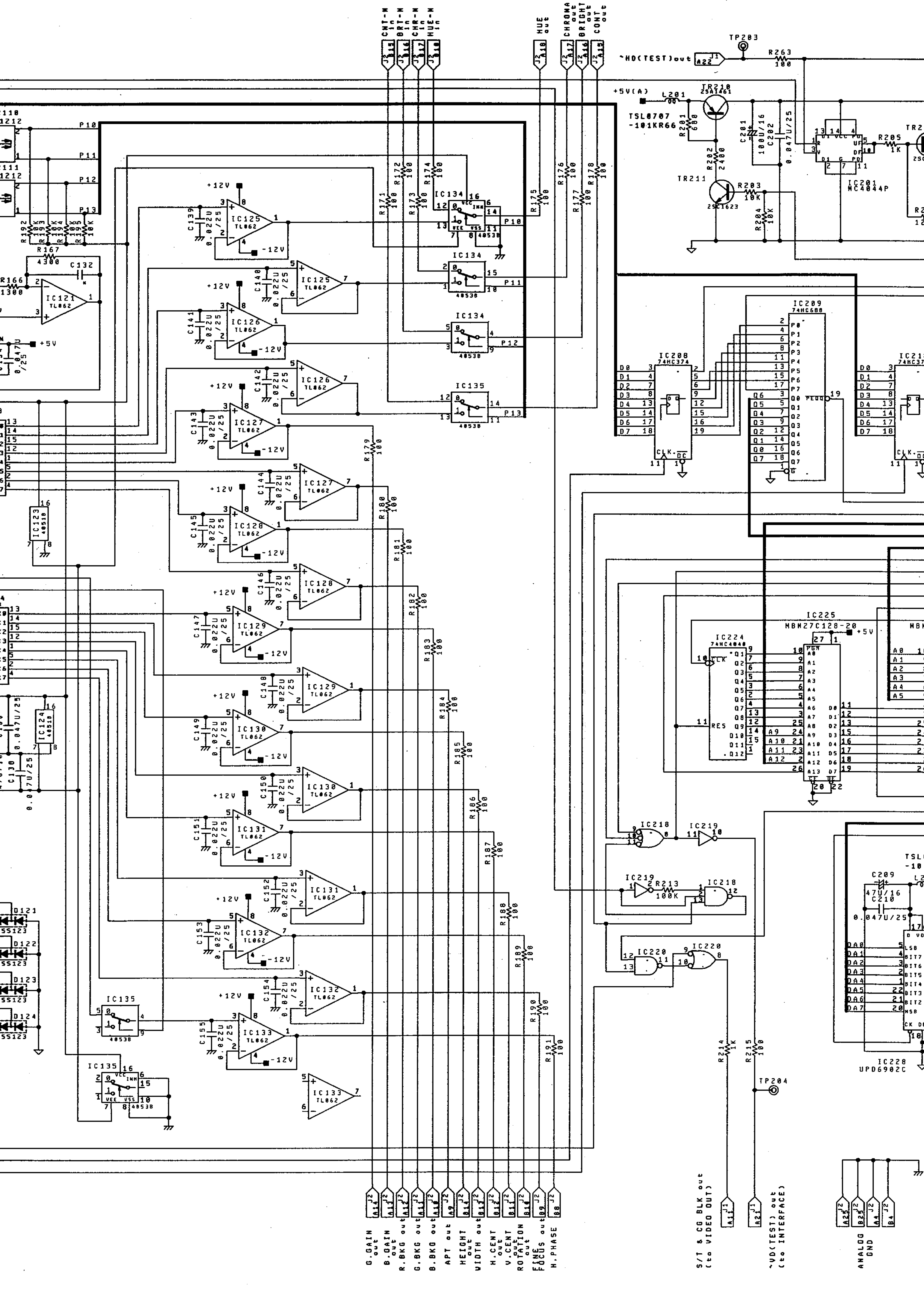
20/30 SERIES
MPU BOARD
PARTS LOCATION
PC1Y29

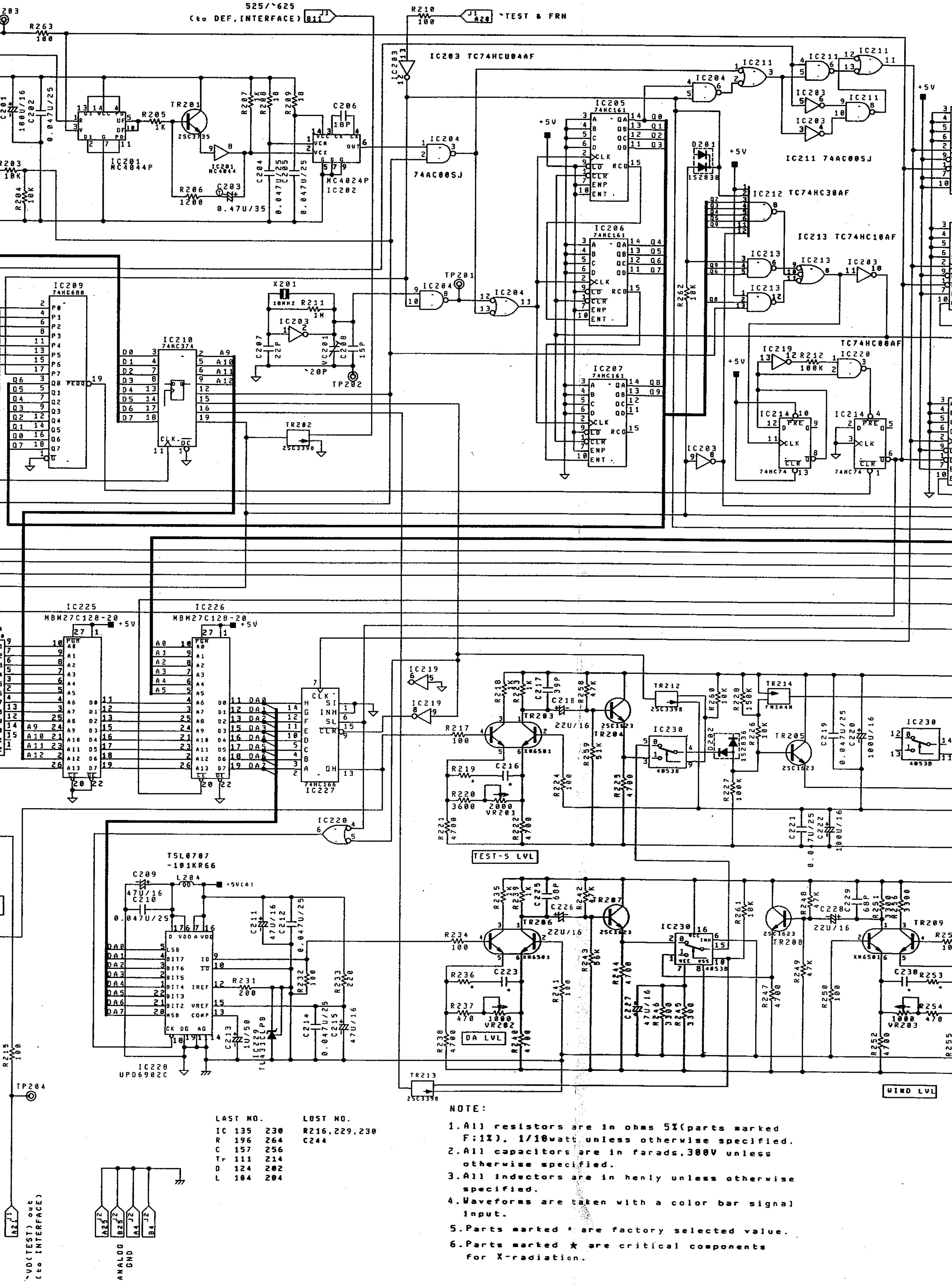


Tx out
Rx in
PROBE*ON
D-COMP *A/B
FBP in
*FBP(5)
SW IRQ1 in
LIGHT SENSE in
SI-REN in
WL-REN in
RE-A in
RE-B in
EL101
00-8261
-0633-11
-852
TC74HC00AF
IC101
HD6303Y
IC102
TL7700C
IC103
7266A
IC104
IC105
HN27C256G-20
IC106
HM6264ALFP-15L
IC108
74HC138
IC111
X101
4MHZ
BT101
3V
L101-103
TSL0707-101KR66(x3)
+12V in
ANALOG GND
-12V in
+5V in
DIGITAL GND
+5V(A)
+12V
-12V
+5V
1SS123
1S2838
0.047U/25
100U/16



~FBP(5) out
~VD(5) in
S/T LVL in
B.CG out
G.CG out
R.CG out
IC111
TC74HC04AF
IC112 74HC374
IC113 UPD6145
L104 39U
C127 15P
C128 15P
D113 1S2838
R134 12K
R135 12K
R136 12K
R137 430
R138 430
R139 430
R140 10K
C129 0.047U/25
IC114 4053B
IC115 74HC4053
R146 6800
TR104
R145 100
R144 6800
TR103
R143 100
R142 6800
TR102
R141 100
2SA812
D114 1SS123
C130 0.047U/25
R133 100
D110-112
1SS101(x3)
TR101 2SC3735
R125 33K
R126 24K
R127 5100
IC107 LM311
R128 1500
R129 10K
R130 24K
R131 22K
R132 10K
R121 100
R122 100
IC128 AD7533JN
C131 0.047U/25
IC118 74HC374
IC119 74HC374
IC121 TL062
R166 1300
R167 4300
IC122 UPC1060
C133 0.047U/25
C134 0.047U/25
TR110 XN1212
TR111 XN1212
R192 10K
R193 10K
R194 10K
M7-1-103J
RP101
TR107 XN1212
TR108 XN1212
TR109 XN1212
IC123 4051B
IC124 4051B
R168 10
C136 47U/16
C135 0.047U/25
R169 3300
R170 3300
C137 47U/16
C138 0.047U/25
IC109 74HC138
IC110 74HC367
IC116 74HC374
IC117 74HC245
D115 1S2836
D116 1S2836
R147 10K
R148 100
R149 100
R150 100
R151 100
R152 100
R153 100
R154 100
R155 100
R156 100
R157 100
TR105 XN1212
TR106 XN1212
D117 1SS123
D118 1SS123
D119 1SS123
D120 1SS123
D121 1SS123
D122 1SS123
D123 1SS123
D124 1SS123
R158 100
R159 100
R160 100
R161 100
R162 100
R163 100
R164 100
R165 100
IC213 74HC10
C241 0.047U/25
IC227 74HC166
C256 0.047U/25
$500* out
$200* out
$4003 out
A0 out
A1 out
A2 out
AFC X
DEGAUSS ~ON
~SET UP
AFC Y
~MATRIX
F-COLOR
S-PAL
COMB
D7 I/O
D6 I/O
D5 I/O
D4 I/O
D3 I/O
D2 I/O
D1 I/O
D0 I/O
+5V
+12V
-12V

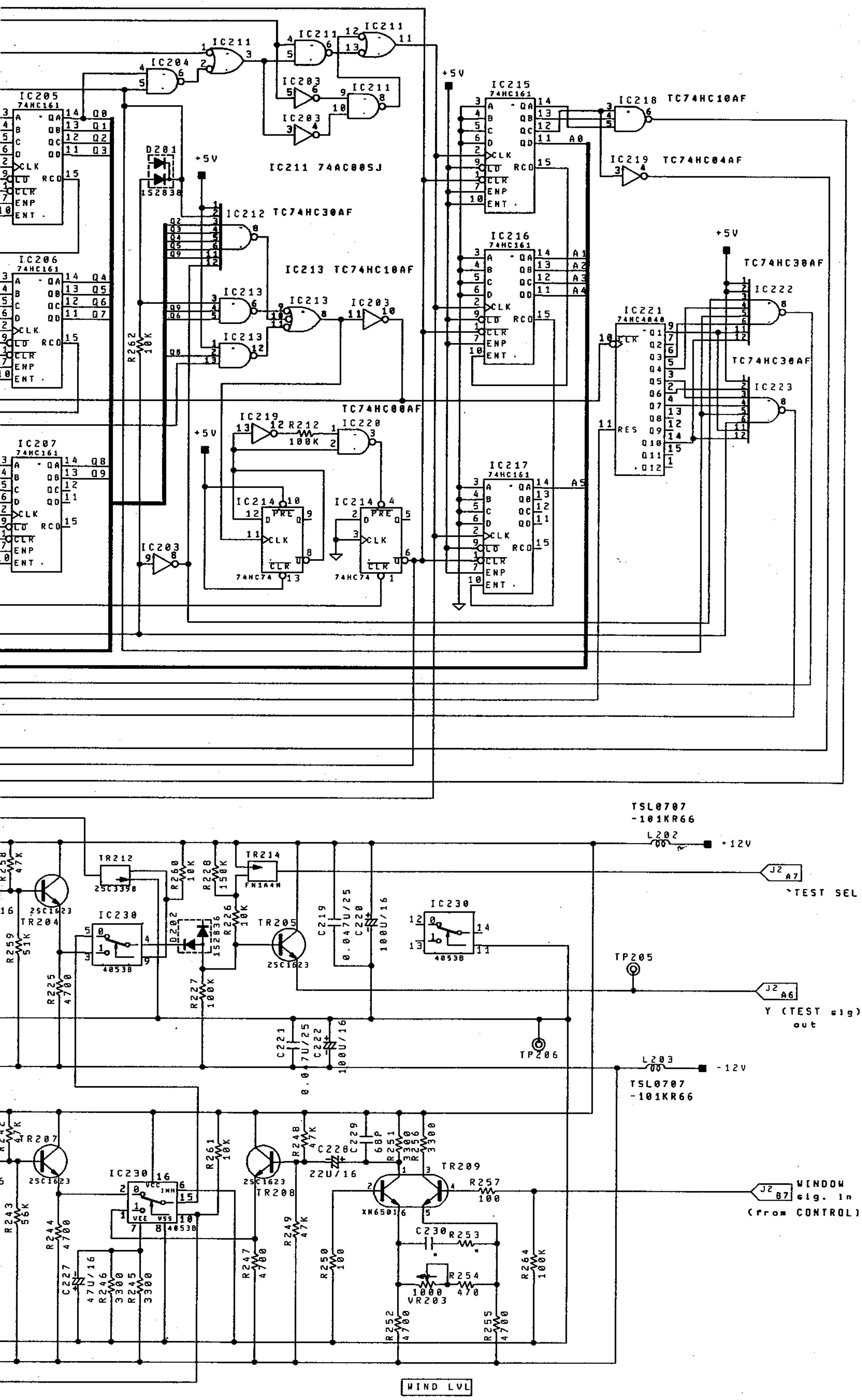

CNT-M in
BRT-M in
CHR-M in
HUE-M in
HUE out
CHROMA out
BRIGHT out
CONT out
~HD(TEST)out
+5V(A)
TSL0707 -101KR66
IC201 MC4044P
IC134
IC125 TL062
IC126 TL062
IC127 TL062
IC128 TL062
IC129 TL062
IC130 TL062
IC131 TL062
IC132 TL062
IC133 TL062
IC135 4053B
IC121 TL062
IC123 4051B
IC124 4051B
IC208 74HC374
IC209 74HC688
IC224 74HC4040
IC225 MBM27C128-20
IC218
IC219
IC220
IC228 UPD6902C
TP203
TP204
G.GAIN out
B.GAIN out
R.BKG out
G.BKG out
B.BKG out
APT out
HEIGHT out
WIDTH out
H.CENT out
V.CENT out
ROTATION out
FINE FOCUS out
H.PHASE
S/T & CG BLK out (to VIDEO OUT)
~VD(TEST) out (to INTERFACE)
ANALOG GND



LAST NO.			LOST NO.
IC	135	230	R216,229,230
R	196	264	C244
C	157	256	
Tr	111	214	
D	124	202	
L	104	204	

NOTE:

1. All resistors are in ohms 5%(parts marked F:1%), 1/10watt unless otherwise specified.
2. All capacitors are in farads,300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.



re in ohms 5%(parts marked
unless otherwise specified.
are in farads,300V unless
fied.
re in henly unless otherwise

aken with a color bar signal

are factory selected value.
are critical components

20/30 SERIES COLOR MONITOR MPU BOARD Schematic Diagram C11-904374

2-3. INTERFACE BOARD ⟨Fixed in SLOT No.2⟩

(1) Outline

In this board, there are functions of selecting one of three composite video input channels, converting the AUX input signals(RGB or YPBPR) to output YPBPR signals, detecting boards inserted in the SLOT section, and creating various pulses.

(2) Circuit Description

(a) Interface system

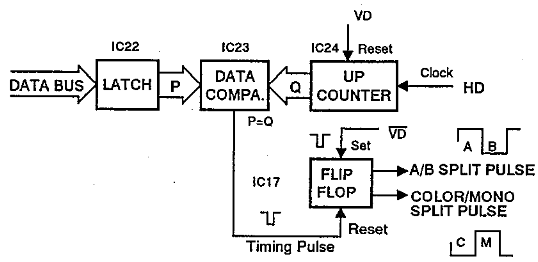
① Data I/O circuit

Three address buses of A0 ~ A2 are divided in to eight addresses ($5000~$5007) by the IC9 address decoder IC. Eight address lines latch ICs 10, 11, 12, 13, 22, 27, 28 and 29 respectively and they function to receive and transmit data via the CPU (IC101) and data bus in the MPU BOARD.

- **IC10** ··· Latches the data from the CPU and controls various selections.
- **IC11** ··· When any decoder board or digital board has been set, the input to this IC is considered as "**L**" and the data is transferred to the CPU.
- **IC12** ··· The output from the burst detection circuit in the decoder board is inputted to this IC and then, transferred to the CPU. The CPU reads which is the "**H**" among the four control lines, and identifies the system among NTSC, PAL-B, PAL-M and SECAM and then, select a decoder board suitable for the system.
- **IC13** ··· Latches the data from the CPU and controls various selections.
- **IC22** ··· Outputs the data on the screen split position for the COLOR/MONO and A/B SPLIT.
- **IC27** ··· Latches the data from the CPU and controls various selections.
- **IC28** ··· When the PARALLEL REMOTE mode is selected, the data from the remote connector on the rear are inputted to this IC and transferred to the CPU.
- **IC29** ··· Latches the data from the CPU and controls selection of input channels.

② COLOR/MONO and A/B SPLIT circuits

Splitting is accomplished by selecting the COLOR/MONO or ch. A/B control lines at the intended position on the scanning line. The timing pulse for selection is generated by the IC23 data comparator and outputted from the No.19 pin. The data from the CPU and the IC24 UP counter data which uses HD as a clock are compared with each other in the IC23 and when the data agree with each other, an active "**L**" is outputted from the No.19 pin.



(b) Pulse system

① Synchronous separation circuit

The Y signal, the HD signal with the D1 inputted, and the EXT SYNC signal are inputted to the IC1(analog switch). One of them is selected and outputted from IC1.

The selected signal is amplified in the IC2 and is applied to the inverting input terminal of the IC3 comparator. On the other hand, a DC signal which has been attained by rectifying the negative portion of the selected synchronizing signal is applied to the non-inverting input terminal of the IC3 comparator. As a result, a positive synchronizing signal is outputted from the No.1 pin of IC3.

② Synchronizing signal detection circuit

The synchronizing signal outputted from the IC3 No. 1 pin undergoes peak holding by the D4 and C12 and then, inputted to the No.5 pin of the IC3 comparator. As a result, if a synchronizing signal has been applied to the the IC3 No.7 output, "**H**" will be detected and if not, "**L**" will be detected. When"**L**" is detected, the IC5 (1/3) analog switch setting is changed to the position corresponding to the free-run HD pulse which is generated in the MPU BOARD.

023

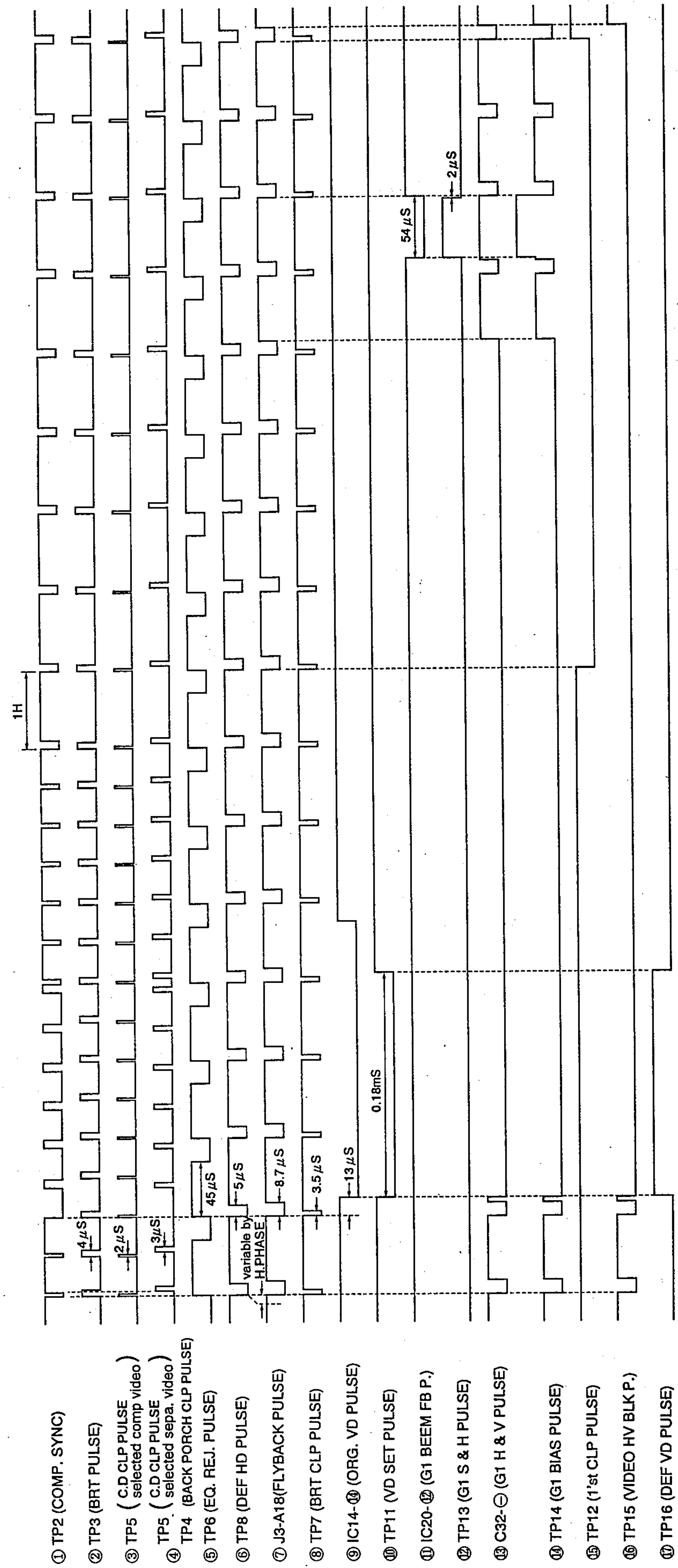


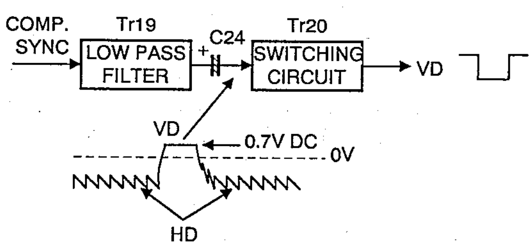
Fig 2.3 Timing chart

024

③ Horizontal pulse generating circuit
The negative composite synchronizing signal outputted from the IC5 No.14 pin is inputted to the IC6 ~ IC 8 monostable multivibrators. If it is inputted to "**A**" of the IC, it will be triggered at the rising edge and if inputted to "**B**", it will be triggered at the falling edge and, in both cases, it will be outputted from "**Q**" (positive polarity) or "$\overline{\mathbf{Q}}$" (negative polarity) at the pulse width determined by the time constant of the CR which is attached to the outside of the IC. For the phase of the pulse, refer to the timing chart shown in Fig. 2-3.

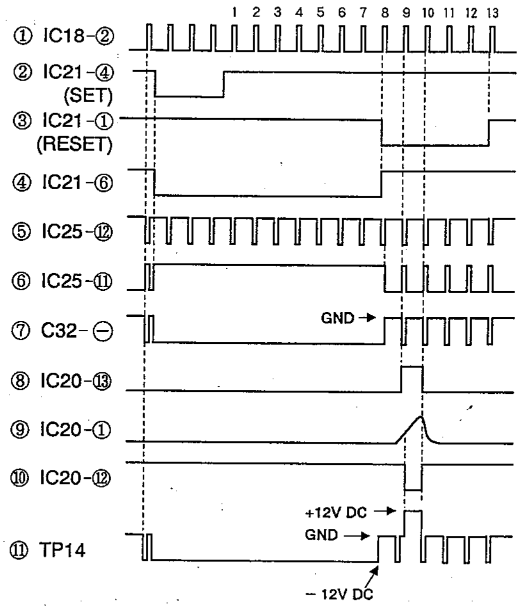
④ Equalizing pulse eliminating circuit
To eliminate the equalizing pulse which has been added to the composite synchronizing signal, the "**Q**" output width of the IC7 (2/2) monostable multivibrator is set to the width equivalent to two-third of 1H (Fig. 2-3 ⑤) and the output pulse is fed back to the "**A**" input.

⑤ Vertical pulse generating circuit
The positive composite synchronizing signal which is outputted from the IC3 No.1 pin passes the low-pass filter consisting of R65, R66, R67, R68, C21, C22 and C23 to reduce the horizontal synchronizing signal component level and then, it becomes a complete vertical synchronizing signal (VD) after passing through the switching circuit which is clamping the VD peak and which consists of C24, R70, R71 and Tr20.



The vertical synchronizing signal outputted from the Tr20 collector, the test signal VD and the VD for D1 input are inputted to the analog switch IC14 (1/3)(2/3), respectively and any one of them is outputted from the IC14 No.14 pin. Using this pulse as a trigger, the pulse width is changed by the IC15 and IC16 monostable multivibrators to become a vertical pulse.

⑥ G1 BIAS pulse generating circuit



The G1 BIAS pulse is produced on the basis of a counter and the action of the counter is as given below. The VD pulse (the waveform ② in the above Fig.) outputted from the IC16 No.9 pin is inputted to the clear terminal of the IC18 counter and resets the counter. Counting up is accomplished by using the flyback pulse (① in the above Fig.) which is transmitted from the DEF BOARD via the MPU BOARD as a clock.
The HV blanking pulse (⑦ in the above Fig.) which is a component of the G1 BIAS pulse is produced in the following procedure. When the pulse ② in the above Fig. is inputted to the set terminal of the IC21 (2/2) RS flip flop and the pulse ③ in the above Fig. produced in the IC18 counter is inputted to the reset terminal, the V blanking pulse (④ in the above Fig.) is produced. This pulse is then mixed with the flyback pulse (⑤ in the above Fig.) in the IC25 (4/4) NAND circuit to become the pulse ⑦.
The BIAS pulse (⑩ in the above Fig.) which is a component of the G1 BIAS pulse is produced in the following procedure. The pulse (⑧ in the above Fig.) produced in the IC18 counter and the pulse (⑨ in the above Fig.) produced by integrating this pulse by theVR10, R87 and C29 are mixed with each other in the IC20 (3/3) NAND circuit to become the pulse ⑩.
The HV blanking pulse (⑥ in the above Fig.) outputted from the IC25 No.11 pin is inverted in the Tr28 and is clamped to the GND by the D20 (⑦ in the above Fig.) The pulse (⑩ in the above Fig.) is mixed with this pulse by the Tr29

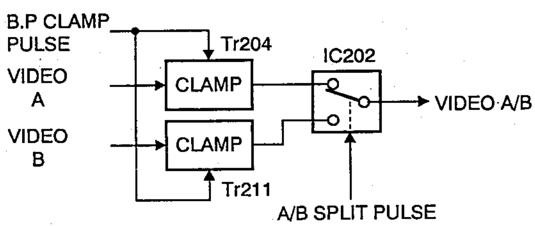
and D22 to produce the G1 BIAS pulse (⑪ in the Fig. of previous page)

⑦ 50/60Hz detection circuit
If a 50Hz signal is detected in the IC26, **"H"** will be outputted from the No.6 pin and if a 60Hz signal is detected, **"L"** will be outputted. This output signal is transmitted to the CPU via the data bus. The CPU determines whether the deflection system is set at 50Hz or 60Hz according to the control line and the SYSTEM setting of the MENU.

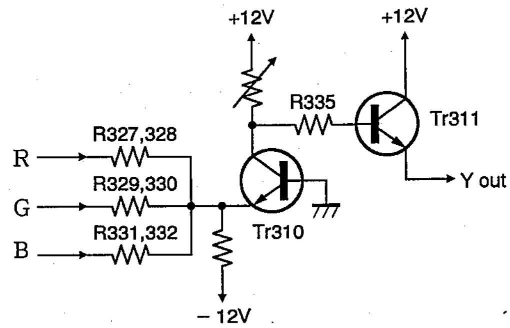
(c) Signal system

① VIDEO select circuit
The data, which selects the channel of the video input, transmitted from the CPU is latched in the IC29 and then, inputted to the base of the Tr202, Tr209 and Tr216.
When the transistor has been turned on, a backward bias is actuated on the diodes (D201, 202 and 203) connected to the collector to stop the signal. When the transistor has been turned off, a forward bias is actuated on the diodes to pass the signal.
Therefore, any one of the three transistors is turned off to transmit one signal to the cathode of the diode. The selected signal is inputted to the IC201 No.4 pin via the Tr206 emitter follower.

② A/B SPLIT circuit
The signals inputted to the VIDEO A and VIDEO B are clamped by the Tr204 and Tr211, respectively and inputted to the IC202 No. 2 and 7 pins. These two signals are switched by the A/B SPLIT pulse inputted to the IC202 No.3 pin and the selected signal is inputted to the IC201 No.15 pin via the Tr213 emitter follower.



③ RGB input matrix circuit
The R, G and B signals are converted to Y, R-Y and B-Y signals, respectively when RGB signals are inputted and then, outputted from the INTERFACE BOARD. The converted Y signal is produced by passing the R, G and B signals through the resistance matrixes R327 through R332, respectively. It is adjusted by the Tr310 amplifier so that its level may be the same as that obtained when the YPBPR signals are inputted and then, inputted to the IC301 analog switch via the Tr311 emitter follower.



On the other hand, the converted R-Y and B-Y signals are produced when the Y signal which is generated in the circuit shown above is subtracted from the R signal and B signal in the Tr302 and Tr317 differential amplifiers, respectively.
The Y, R-Y and B-Y signals so produced are inputted to the IC301. Also, the Y, R-Y and B-Y signals for YPBPR input are inputted to the IC301. They are selected by the IC301 analog switch, and inputted to the Tr305, Tr313 and Tr320 emitter followers.
When the AUX switch is set to the selected position ("ON"), the Tr322 transistor is turned on and, at the same time, Tr306, Tr314 and Tr321 are also turned on. A forward bias is actuated on the diodes D301, D303 and D304 and the Y, R-Y and B-Y signals are send to the Tr307, Tr315 and Tr323, respectively. When AUX is not selected, the Tr 322 is turned off and a backward bias is actuated on the diodes D301, D303 and D304 to stop the AUX input signals.

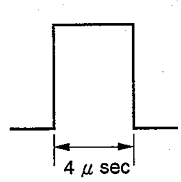
(3) Adjustment Procedure

Apply a 75% color bar signal to the composite video input terminal.

(a) VR 1(BST PHASE)

① Connect the probe to TP3.

② Adjust VR1 so that the pulse width is 4 μ sec.

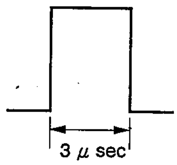


026

(b) VR2(BST WIDTH)

① Connect the probe to TP4.

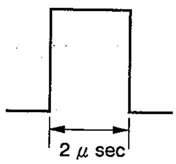
② Adjust VR2 so that the pulse width is 3 μ sec.



(c) VR3(C.D CLP WIDTH)

① Connect the probe to TP5.

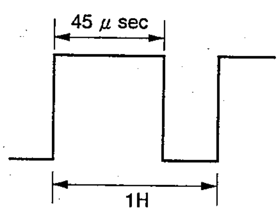
② Adjust VR3 so that the pulse width is 2 μ sec.



(d) VR4(EQ.REJ)

① Connect the probe to TP6.

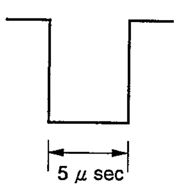
② Adjust VR4 so that the pulse width is 45 μ sec.



(e) VR5(HD WIDTH)

① Connect the probe to TP8.

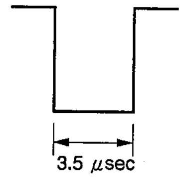
② Adjust VR5 so that the pulse width is 5 μ sec.



(f) VR6(BRT P WIDTH)

① Connect the probe to TP7.

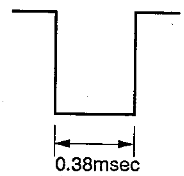
② Adjust VR6 so that the pulse width is 3.5μ sec.



(g) VR7(F.VD WIDTH)

① Connect the probe to TP9.

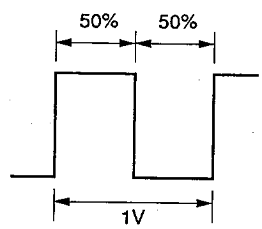
② Adjust VR7 so that the pulse width is 0.38m sec.



(h) VR8(V.DL POS)

① Connect the probe to TP10.

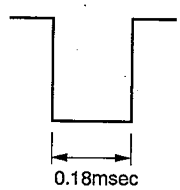
② Adjust VR8 so that the pulse width in the figure below is duty 50%.



(i) VR9(VD WIDTH)

① Connect the probe to TP11.

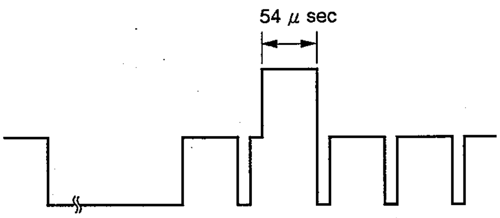
② Adjust VR9 so that the pulse width is 0.18m sec .



(j) VR10(BIAS P. PHASE)

① Connect the probe to TP14.

② Adjust VR10 so that the pulse width shown in the figure below is 54 μ sec.

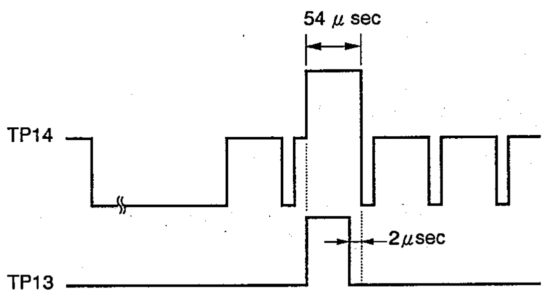


(k) VR11(S/H WIDTH)

① Connect the probe to TP14.

② Connect the probe to TP13, too.

③ Adjust VR11 so that the waveform phase difference of TP14 and TP13 is 2 μsec.



(l) VR201(A/B DC)

① Press the INPUT SELECT switch to select the "A/B".

② Connect the plus side of the voltmeter to TP203 and the minus side to TP201.

③ Adjust VR201 so that the DC voltage is +5V.

Be sure to set the following condition before the adjustment on and after here.

① Apply RGB signals(0.7Vp-p) to the AUX input terminals.

② Set the "RGB/YPbPr" selection to the "RGB" mode on the MENU screen. (Refer to 5-6. in the operation manual for details on the MENU setting method.)

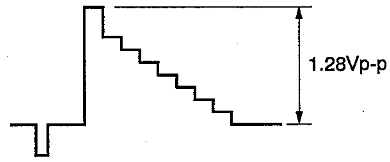
③ Set the AUX switch on the front panel to "ON" position.

④ Set the CHROMA to 50%(preset) with the CHROMA switch on the pull-out panel.

(m) VR304(Y.LVL)

① Connect the probe to TP305.

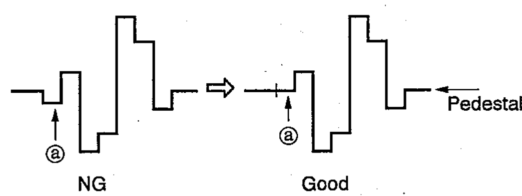
② Adjust VR304 so that the Y signal level is 1.28Vp-p.



(n) VR303(R.MIX LVL)

① Connect the probe to TP302.

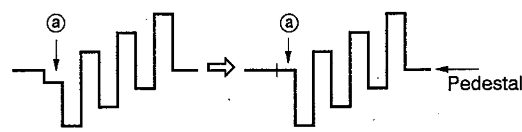
② Adjust VR303 so that the white component (part ⓐ)of a color bar signal is the same level as the pedestal as shown in the figure below.



(o) VR307(B MIX LVL)

① Connect the probe to TP306.

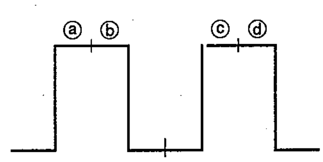
② Adjust VR307 so that the white component (part ⓐ)of a color bar signal is the same level as the pedestal as shown in the figure below.



(p) VR301(R-Y LVL)

① Connect the probe to TP401 on the VIDEO OUT BOARD.

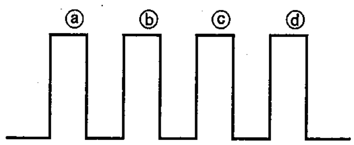
② Adjust VR301 so that the level of ⓐ to ⓓ is the same as shown in the figure below.

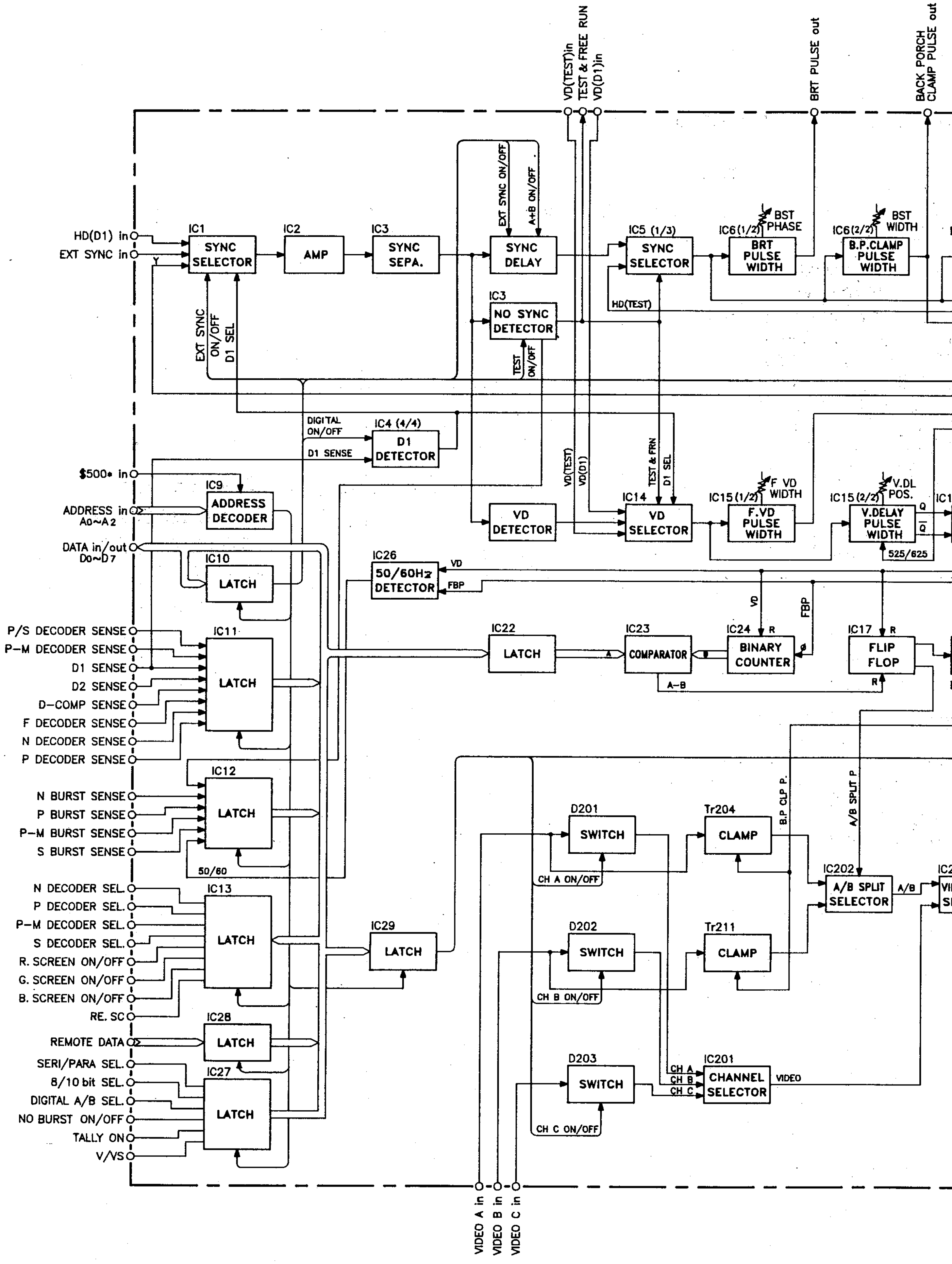


(q) VR305(B-Y LVL)

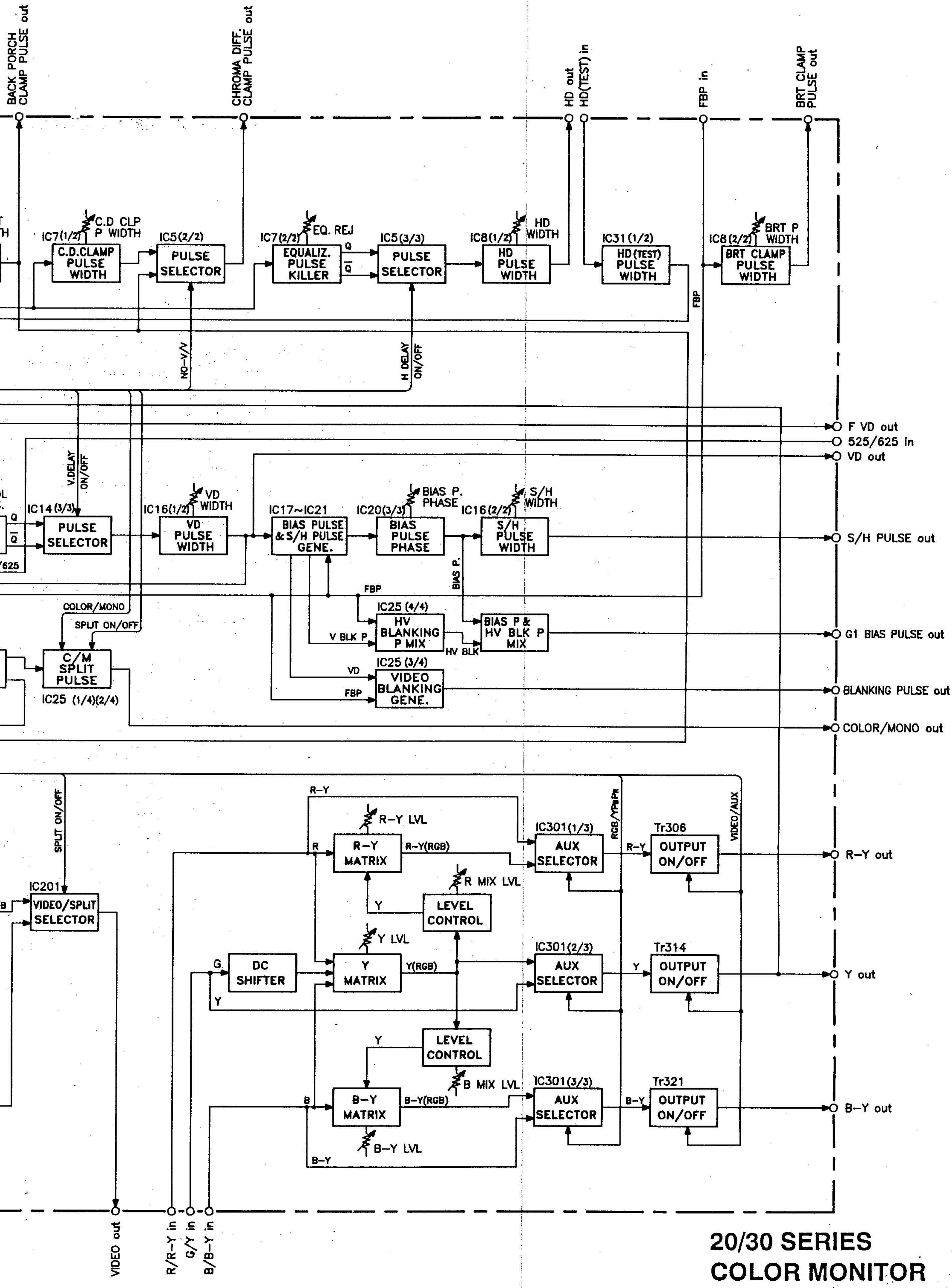
① Connect the probe to TP601 on the VIDEO OUT BOARD.

② Adjust VR305 so that the level of ⓐ to ⓓ is the same as shown in the figure below.

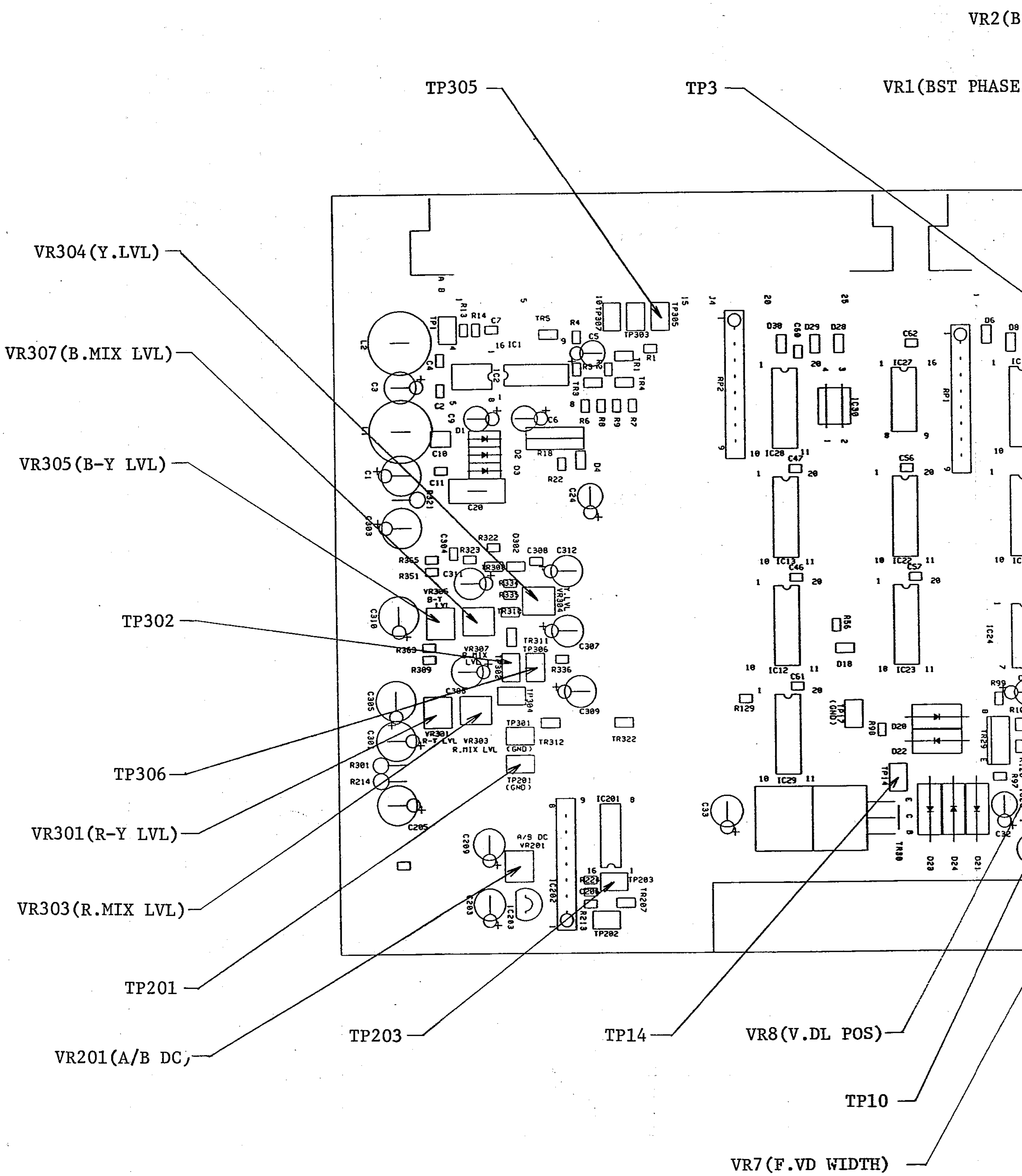




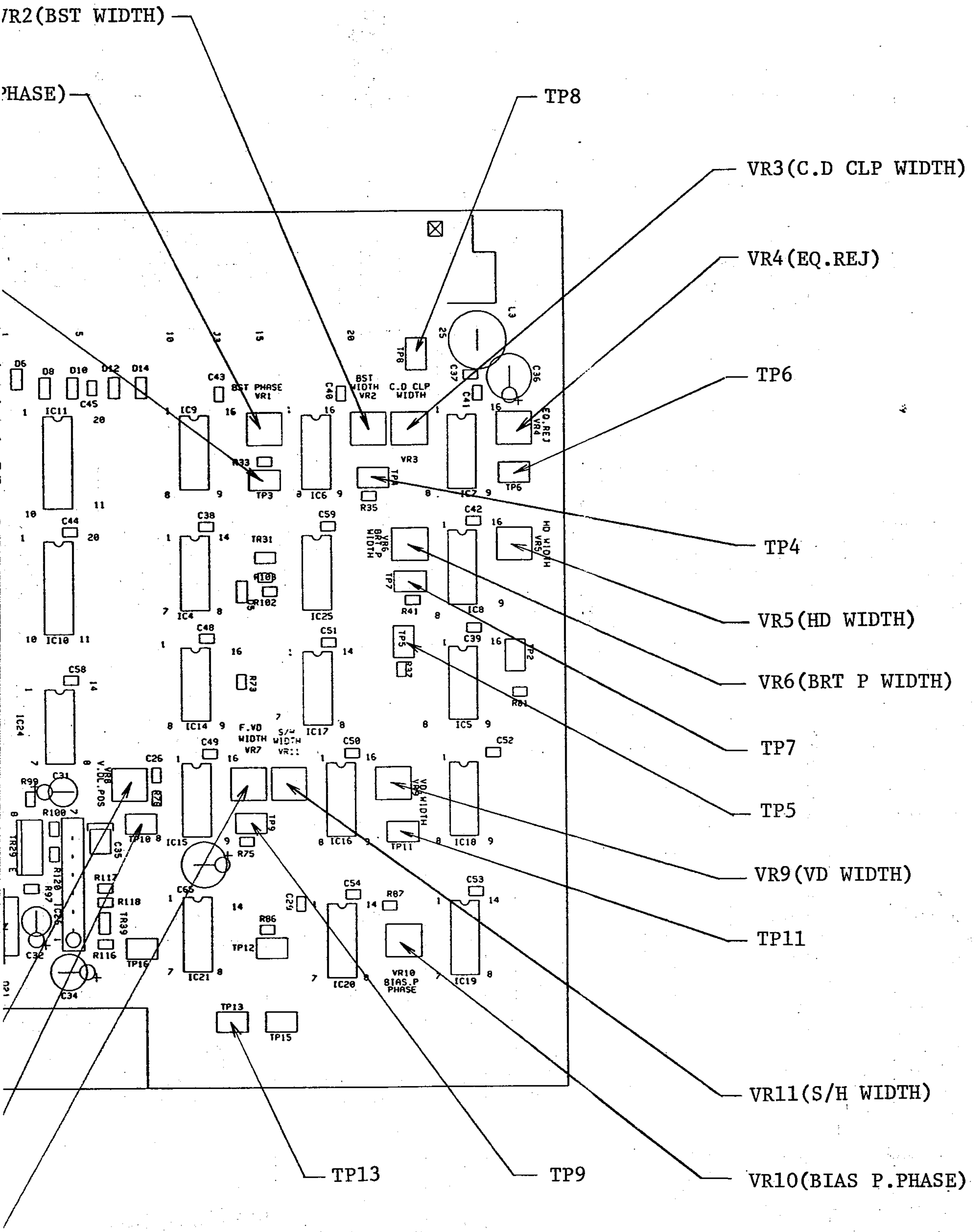
HD(D1) in
EXT SYNC in
IC1
SYNC SELECTOR
IC2
AMP
IC3
SYNC SEPA.
EXT SYNC ON/OFF
A+B ON/OFF
SYNC DELAY
VD(TEST)in
TEST & FREE RUN
VD(D1)in
IC5 (1/3)
SYNC SELECTOR
IC6(1/2)
BST PHASE
BRT PULSE WIDTH
BRT PULSE out
IC6(2/2)
BST WIDTH
B.P.CLAMP PULSE WIDTH
BACK PORCH CLAMP PULSE out
HD(TEST)
IC3
NO SYNC DETECTOR
TEST ON/OFF
EXT SYNC ON/OFF
D1 SEL
DIGITAL ON/OFF
D1 SENSE
IC4 (4/4)
D1 DETECTOR
$500• in
IC9
ADDRESS DECODER
ADDRESS in
A0~A2
DATA in/out
D0~D7
IC10
LATCH
VD(TEST)
VD(D1)
TEST & FRN
D1 SEL
IC14
VD SELECTOR
VD DETECTOR
IC15(1/2)
F VD WIDTH
F.VD PULSE WIDTH
IC15(2/2)
V.DL POS.
V.DELAY PULSE WIDTH
525/625
IC26
50/60Hz DETECTOR
VD
FBP
P/S DECODER SENSE
P-M DECODER SENSE
D1 SENSE
D2 SENSE
D-COMP SENSE
F DECODER SENSE
N DECODER SENSE
P DECODER SENSE
IC11
LATCH
IC22
LATCH
IC23
COMPARATOR
A-B
IC24
BINARY COUNTER
IC17
FLIP FLOP
N BURST SENSE
P BURST SENSE
P-M BURST SENSE
S BURST SENSE
IC12
LATCH
50/60
B.P CLP P.
A/B SPLIT P
D201
SWITCH
CH A ON/OFF
Tr204
CLAMP
IC202
A/B SPLIT SELECTOR
A/B
N DECODER SEL.
P DECODER SEL.
P-M DECODER SEL.
S DECODER SEL.
R. SCREEN ON/OFF
G. SCREEN ON/OFF
B. SCREEN ON/OFF
RE. SC
IC13
LATCH
IC29
LATCH
D202
SWITCH
CH B ON/OFF
Tr211
CLAMP
REMOTE DATA
IC28
LATCH
SERI/PARA SEL.
8/10 bit SEL.
DIGITAL A/B SEL.
NO BURST ON/OFF
TALLY ON
V/VS
IC27
LATCH
D203
SWITCH
CH C ON/OFF
IC201
CH A
CH B
CH C
CHANNEL SELECTOR
VIDEO
VIDEO A in
VIDEO B in
VIDEO C in



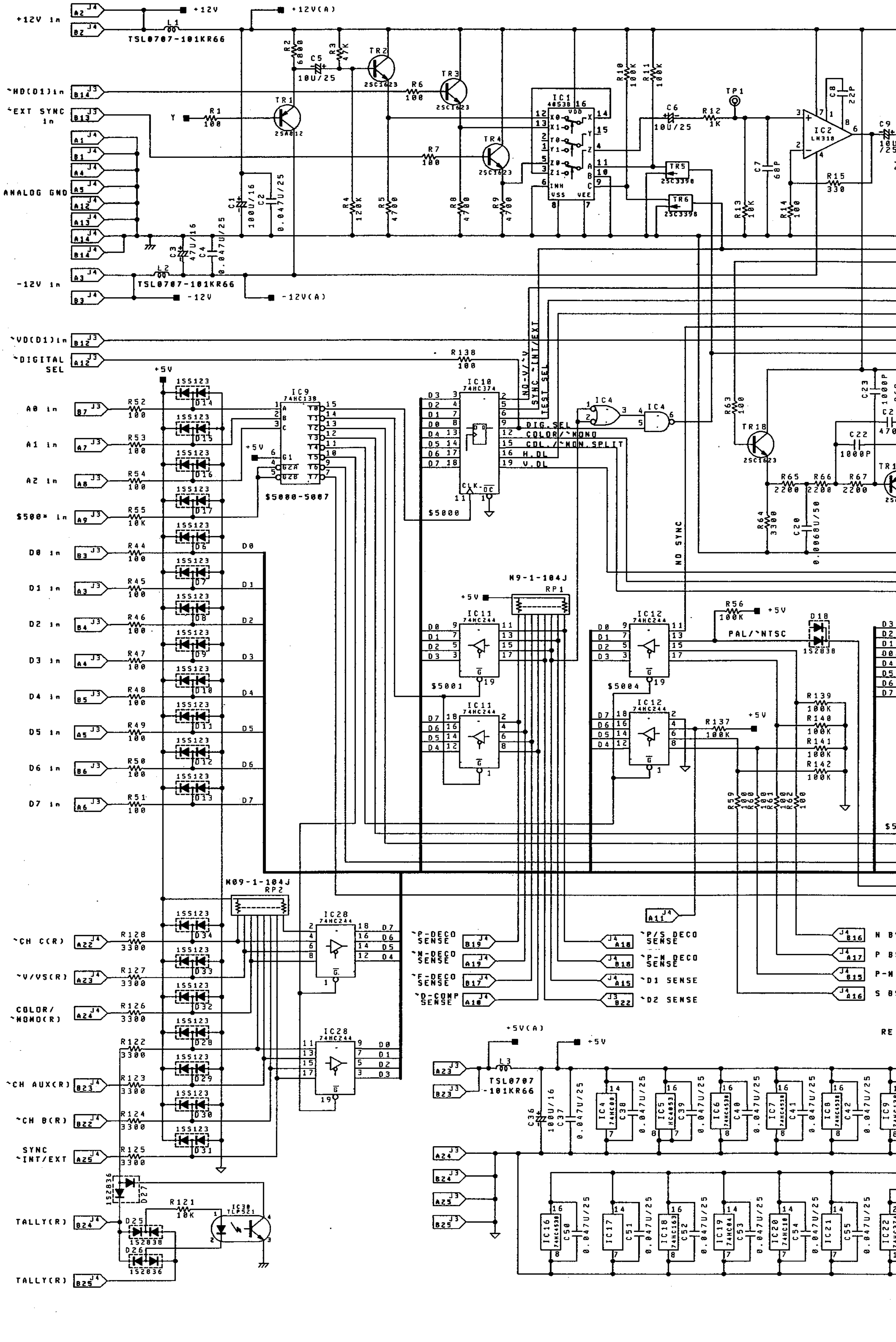
20/30 SERIES
COLOR MONITOR
INTERFACE BOARD
Block Diagram
C2-904360

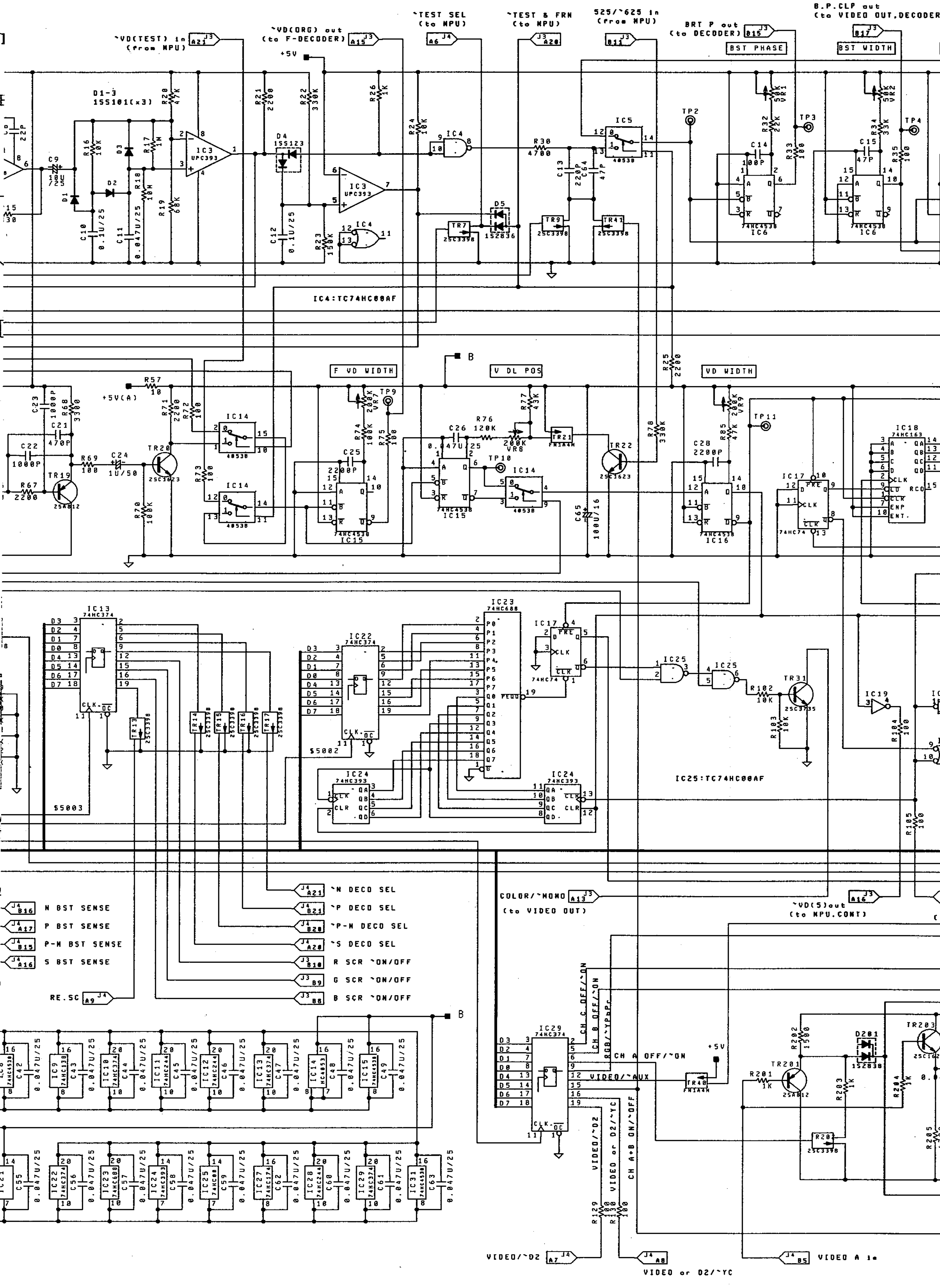


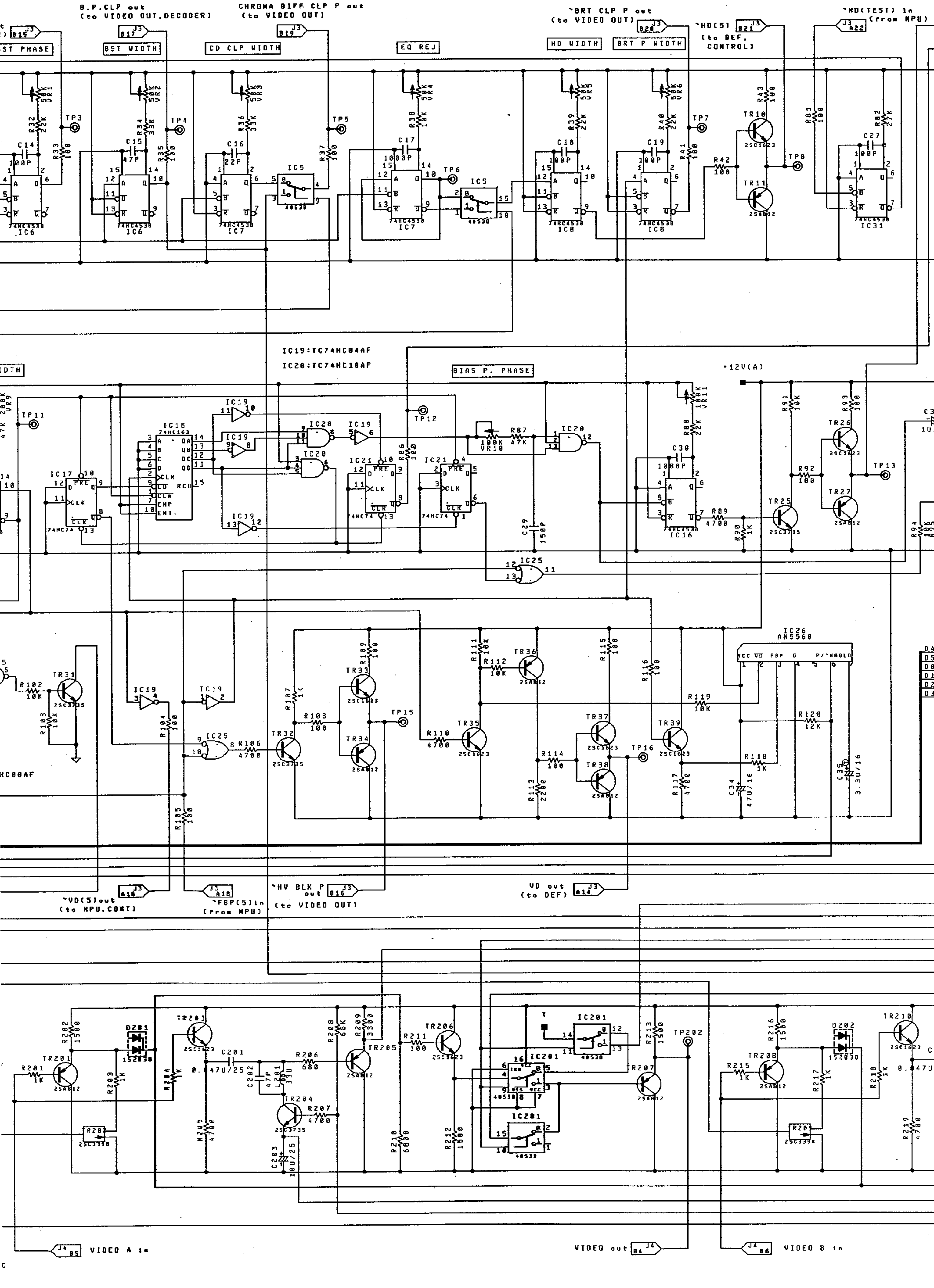
VR2(B
TP305
TP3
VR1(BST PHASE
VR304(Y.LVL)
VR307(B.MIX LVL)
VR305(B-Y LVL)
TP302
TP306
VR301(R-Y LVL)
VR303(R.MIX LVL)
TP201
VR201(A/B DC)
TP203
TP14
VR8(V.DL POS)
TP10
VR7(F.VD WIDTH)



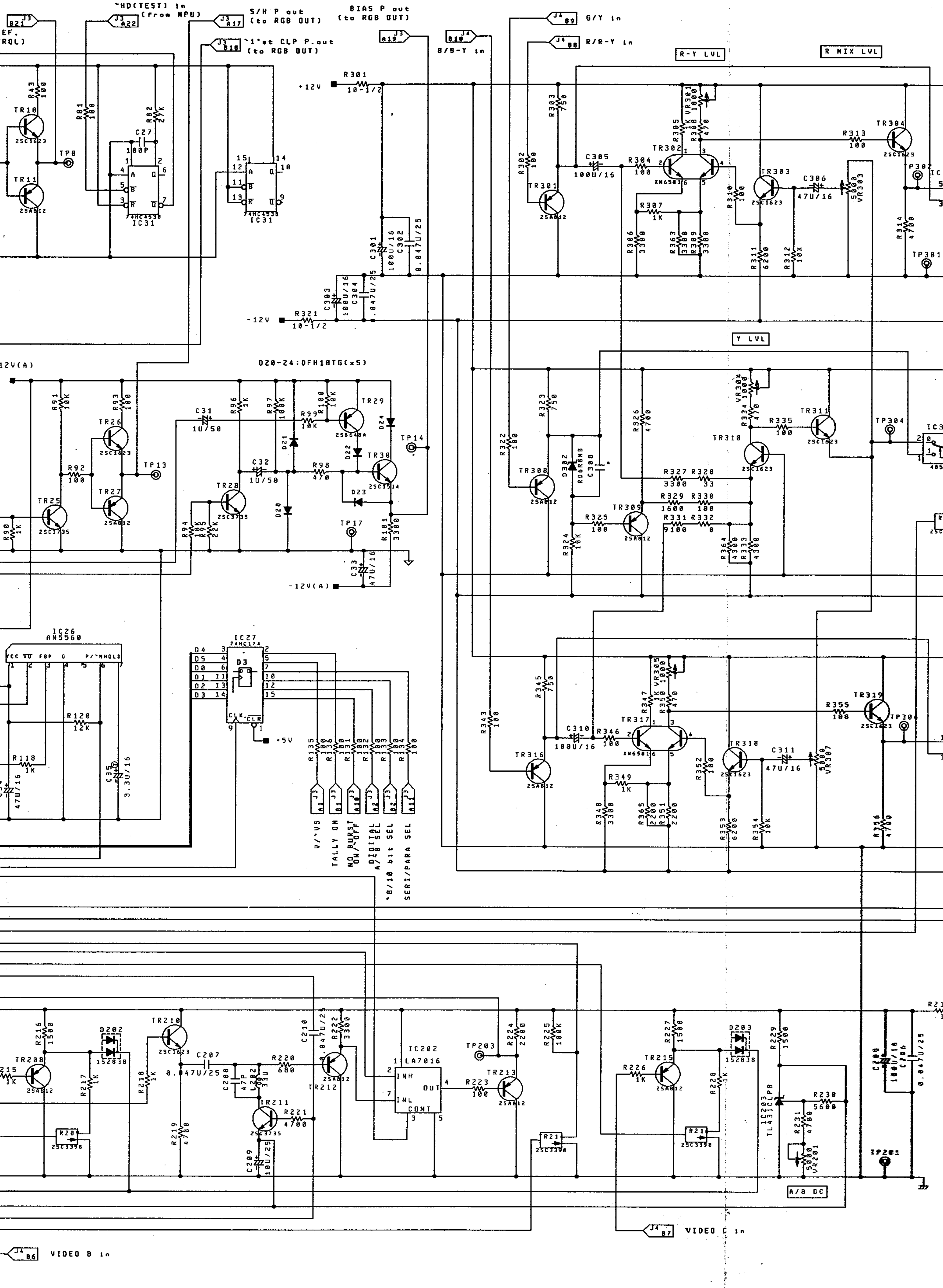
20/30 SERIES
INTERFACE BOARD
PARTS LOCATION
PC1Y61

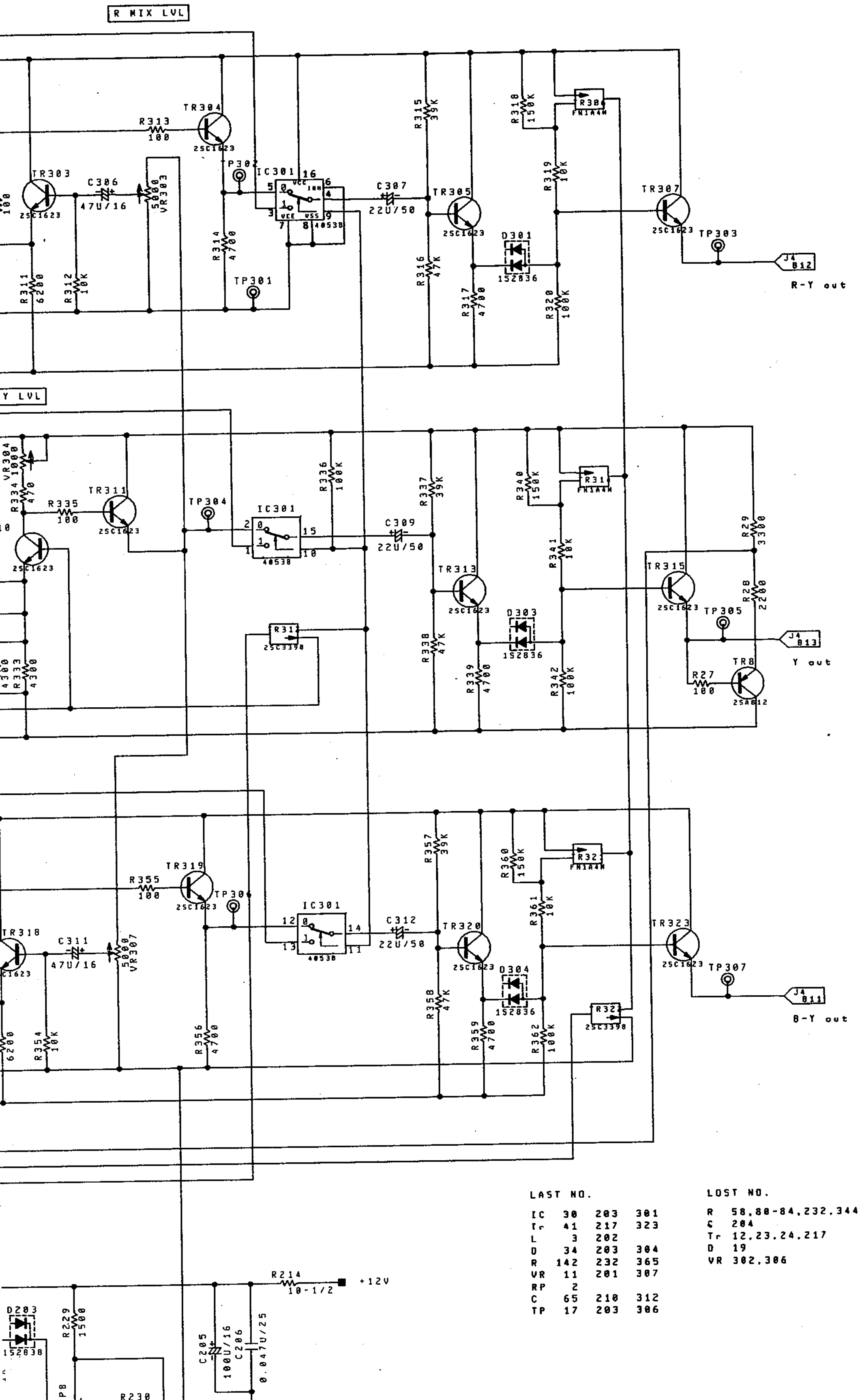

+12V in
+12V
+12V(A)
TSL0707-101KR66
~HD(D1)in
~EXT SYNC in
ANALOG GND
-12V in
-12V
-12V(A)
~VD(D1)in
~DIGITAL SEL
+5V
A0 in
A1 in
A2 in
$500* in
D0 in
D1 in
D2 in
D3 in
D4 in
D5 in
D6 in
D7 in
1SS123
IC9 74HC138
$5000-5007
IC10 74HC374
$5000
ND-V/~V
SYNC ~INT/EXT
TEST SEL
DIG.SEL
COLOR/~MONO
CDL./~MON.SPLIT
H.DL
V.DL
IC4
IC1 4053B
IC2 LM318
TP1
NO SYNC
N9-1-104J
RP1
IC11 74HC244
$5001
IC12 74HC244
$5004
PAL/~NTSC
1S2838
N09-1-104J
RP2
IC28 74HC244
~CH C(R)
~V/VS(R)
COLOR/ ~MONO(R)
~CH AUX(R)
~CH B(R)
SYNC ~INT/EXT
TALLY(R)
IC30 TLP521
~P-DECO SENSE
~N-DECO SENSE
~F-DECO SENSE
~D-COMP SENSE
~P/S DECO SENSE
~P-N DECO SENSE
~D1 SENSE
~D2 SENSE
+5V(A)
TSL0707 -101KR66


~VD(TEST) in (from MPU)
~VD(ORG) out (to F-DECODER)
~TEST SEL (to MPU)
~TEST & FRN (to MPU)
525/~625 in (from MPU)
BRT P out (to DECODER)
B.P.CLP out (to VIDEO OUT,DECODER)
BST PHASE
BST WIDTH
IC4:TC74HC00AF
F VD WIDTH
V DL POS
VD WIDTH
IC25:TC74HC00AF
~N DECO SEL
~P DECO SEL
~P-M DECO SEL
~S DECO SEL
R SCR ~ON/OFF
G SCR ~ON/OFF
B SCR ~ON/OFF
N BST SENSE
P BST SENSE
P-M BST SENSE
S BST SENSE
RE.SC
COLOR/~MONO (to VIDEO OUT)
~VD(5)out (to MPU.CONT)
CH A OFF/~ON
VIDEO/~AUX
VIDEO/~D2
VIDEO or D2/~YC
VIDEO A in



B.P.CLP out (to VIDEO OUT,DECODER)
CHROMA DIFF CLP P out (to VIDEO OUT)
~BRT CLP P out (to VIDEO OUT)
~HD(5) (to DEF. CONTROL)
~HD(TEST) in (from MPU)
BST PHASE
BST WIDTH
CD CLP WIDTH
EQ REJ
HD WIDTH
BRT P WIDTH
IC19:TC74HC04AF
IC20:TC74HC10AF
BIAS P. PHASE
+12V(A)
IC26 AN5560
~VD(5)out (to MPU.CONT)
~FBP(5)in (from MPU)
~HV BLK P out (to VIDEO OUT)
VD out (to DEF)
VIDEO A in
VIDEO out
VIDEO B in


~HD(TEST) in
(from MPU)
S/H P out
(to RGB OUT)
BIAS P out
(to RGB OUT)
~1'st CLP P.out
(to RGB OUT)
G/Y in
R/R-Y in
B/B-Y in
R-Y LVL
R MIX LVL
Y LVL
+12V
-12V
-12V(A)
D20-24:DFH10TG(×5)
IC26
AN5560
IC27
74HC174
IC31
74HC4538
IC202
LA7016
IC203
TL431CLP8
V/~VS
TALLY ON
NO BURST ON/~OFF
DIGITAL A/B SEL
~8/10 bit SEL
SERI/PARA SEL
A/B DC
VIDEO C in
VIDEO B in



LAST NO.

IC	30	203	301
Tr	41	217	323
L	3	202	
D	34	203	304
R	142	232	365
VR	11	201	307
RP	2		
C	65	210	312
TP	17	203	306

LOST NO.

R	58,80-84,232,344
C	204
Tr	12,23,24,217
D	19
VR	302,306

20/30 SERIES
COLOR MONITOR
INTERFACE BOARD
Schematic Diagram
C11-904375

2-4. NTSC DECODER

2-4-1. PRE DECO(N)BOARD

(1) Outline

This board separates the composite signal of the NTSC system into the luminance signal and the color signal by using of the COMB filter or TRAP circuit to supply them to the DECODER(N)BOARD.

(2) Circuit Description

(a) CCD COMB filter circuit

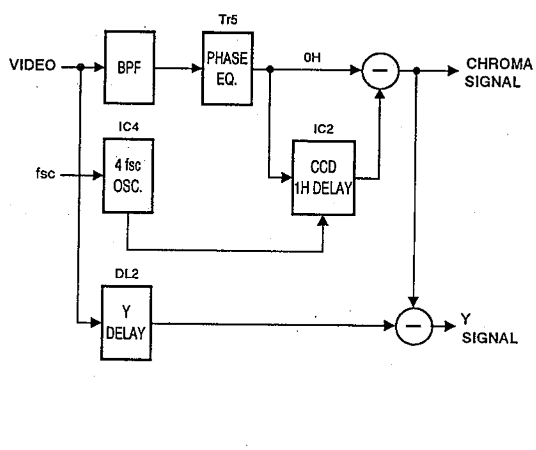
The video signal supplied from the INTERFACE BOARD is selected with D2 signal by the analog switch of IC1 and outputted to IC1-④ pin. It is separated into the luminance signal (Y) and chroma signal (C) by the CCD COMB filter circuit.

The chroma (C) signal separation circuit is firstly described here. It picks up only the frequency centering around 3.58MHz from the video signal by the band pass filter consisting of L1, L2 and L10 to perform phase compensation with the phase equalizer consisting of Tr5, VR10, C8 and L3. The Tr38 serves to subtract the signal delayed for 1H by the 1H CCD delay line (IC2) from this signal and makes a chroma signal alone.

The CCD delay line of IC2 is provided for 1H delay using the quadruple subcarrier (4fsc) as a clock.

This 4fsc clock is made at IC 4 on the basis of the subcarrier sent from the DECODER (N) BOARD.

Next, the luminance signal separation circuit description is given below. It eliminates the delay error between Y and C by equalizing the amount of the signal delay to that of the signal delay caused by the chroma circuit at the Y delay line of DL2. The Tr36 serves to subtract the chroma signal from this signal, thereby separating the luminance signal alone.



(b) Trap circuit

The chroma signal at trapping is made by passing through the delay line DL3 to eliminate the delay error caused by the Y signal trap filter without passing through the CCD COMB filter circuit.

The luminance signal is made by eliminating the 3.58MHz component through the trap filter circuit consisting of C44, C45 and L8.

(3) Adjustment Procedure

Set the preset level of the HUE and CHROMA respectively to 50%.

(a) L1, L2, L10

① Apply a sweep signal to the composite video input terminal.

② Connect the probe to TP1.

③ Adjust L2 and L10 so that the frequency characteristics of 3.58MHz ± 0.5MHz is flat.

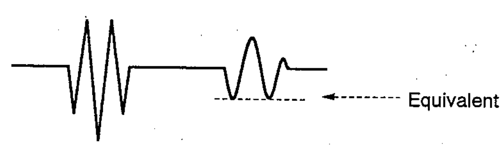
④ Adjust L1 so that the frequency characteristics of 7.16MHz is minimum.

(b) VR10(PHASE EQ)

① Apply a 2T pulse signal to the composite video input terminal.

② Connect the probe to TP1.

③ Adjust VR10 so that the right pulse is the same level as the left pulse.

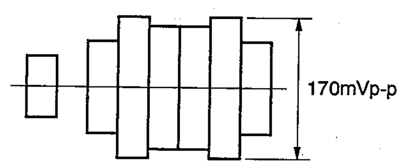


(c) VR2(ϕ H LEVEL)

① Apply a color bar signal.

② Connect the probe to TP1.

③ Adjust VR2 to that the chroma level is 170m Vp-p.

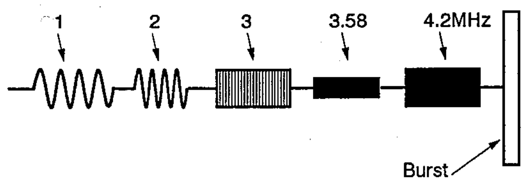


(d) VR3(1H LEVEL)
VR4(1H PHASE)
VR14(1H PHASE EQ)

① Apply a multi burst signal.

② Connect the probe to TP8.

③ Adjust VR3, VR4 and VR14 so that the level of the burst portion is as maximum as possible and the level of the 3MHz portion is as minimum as possible.



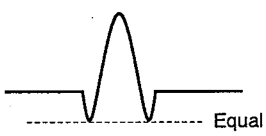
④ Apply a color bar signal.

⑤ Connect the probe to TP3.

⑥ Adjust VR7 and VR8 to eliminate the subcarrier roughly.

⑦ Apply a 2T pulse signal.

⑧ Adjust VR3, VR4 and VR14 so that the right pulse is the same level as the left pulse.

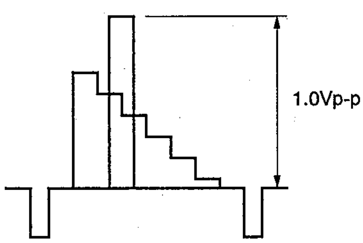


(e) VR5(COMB Y LEVEL)

① Apply a color bar signal.

② Connect the probe to TP7.

③ Adjust VR5 so that the level is 1.0Vp-p.



(f) VR7(Y COMB PHASE)
VR8(COMB LEVEL)
VR11(CHROMA LEVEL)

① Apply a color bar signal.

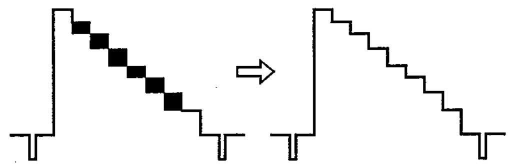
② Connect the probe to the emitter of Tr32.

③ Adjust VR11 so that the burst level is 0.28Vp-p.

④ Set the MONO and COMB switches respectively to "ON" position.

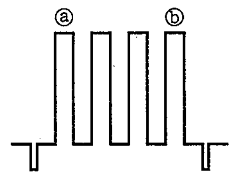
⑤ Connect the probe to TP602 on the VIDEO OUT BOARD inserted into the SLOT No.4.

⑥ Adjust VR7 and VR8 to eliminate the sub carrier.



⑦ Set the MONO switch to "OFF"position.

⑧ At this time, confirm that the portion ⓐ is the same level as the portion ⓑ. Otherwise, readjust VR11.
When readjusting VR11, repeat steps ④ to ⑧ again.



(g) VR1(MONO LEVEL)
VR9(TRAP LEVEL)
VR12(TRAP CHROMA LEVEL)
VR13
L8

① Set the MONO switch to "ON" position and set the COMB switch to "OFF" position.

② Connect the probe to TP602 on the VIDEO OUT BOARD.

③ Adjust L8 to eliminate the sub carrier.

④ Adjust VR9 to attain the same level with the COMB switch "ON".

⑤ Set the MONO switch to "OFF" position.

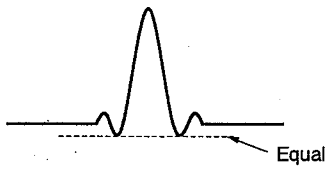
⑥ Adjust VR12 so that the portion ⓐ is the same level as the portion ⓑ in the figure of section (f) ⑧.

⑦ Apply a 2T pulse signal.

⑧ Set the MONO switch to "ON" position.

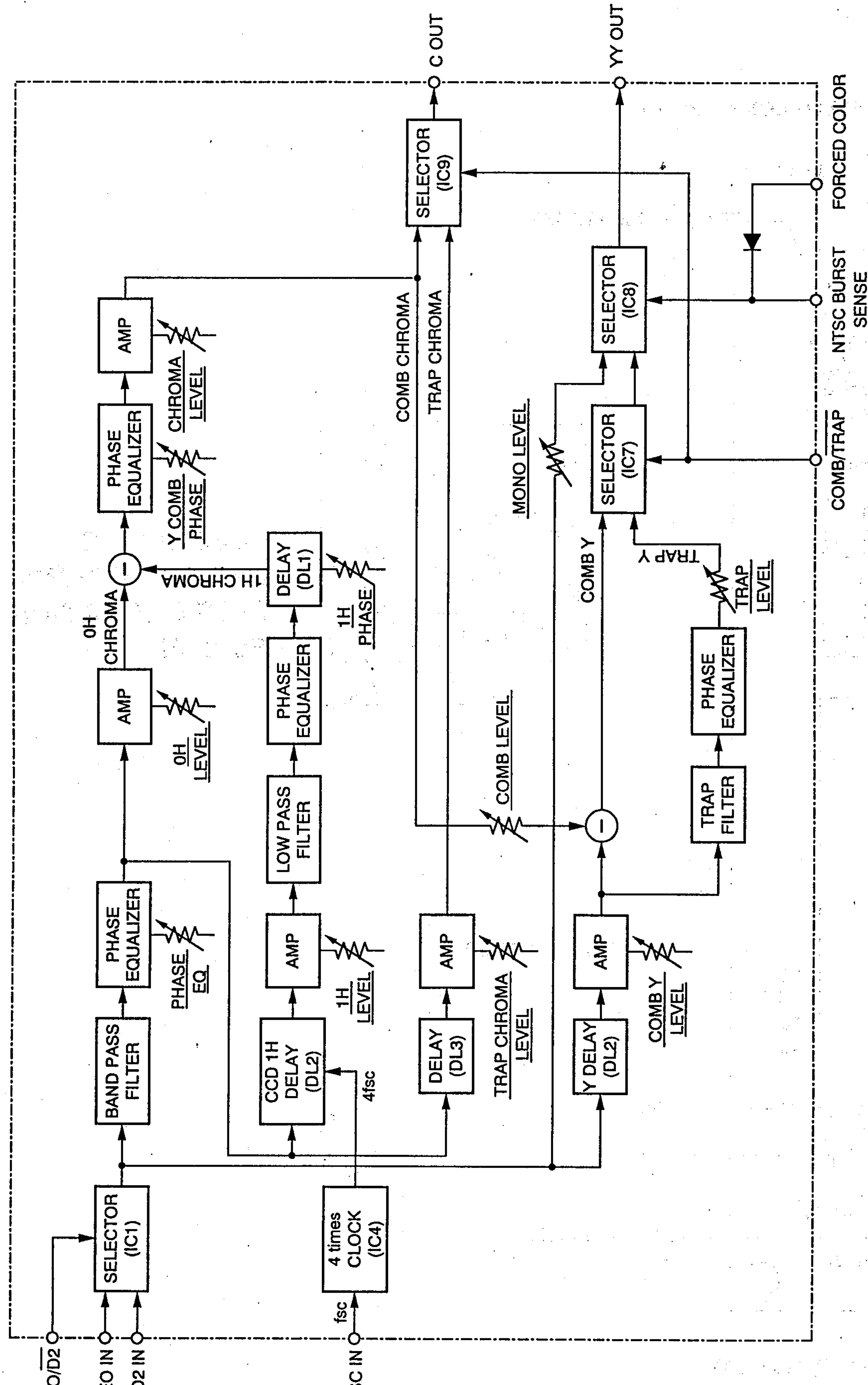
034

⑨ Adjust VR13 so that the right pulse is the same level as the left pulse.

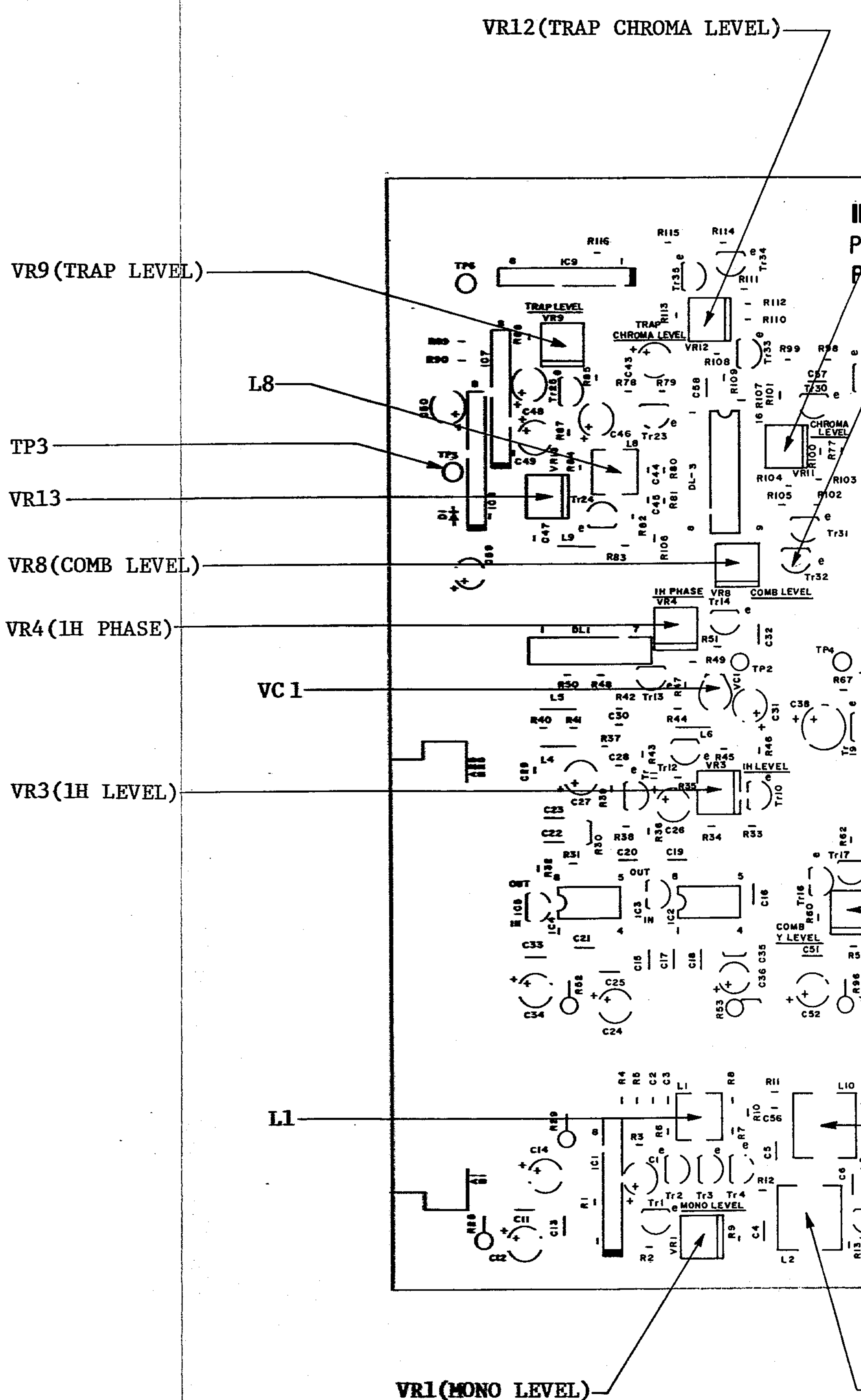


⑩ Apply the signal with the burst and the signal without the burst, which are the same level.

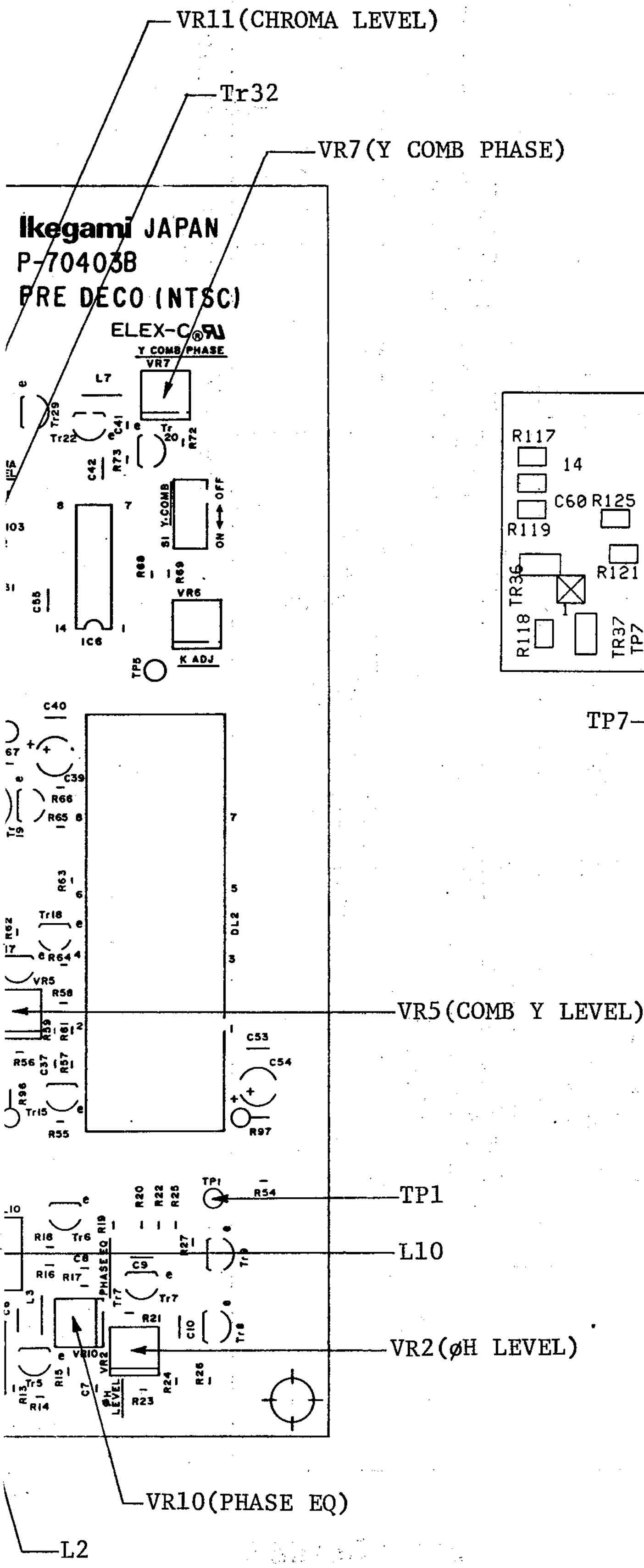
⑪ When changing the input signal, adjust VR1 so that each level is the same.

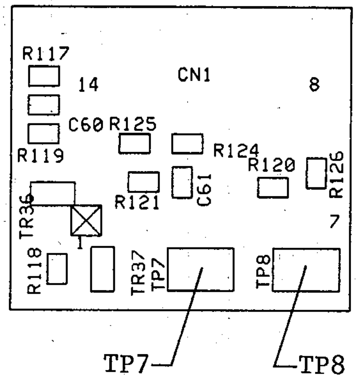


20/30 SERIES
COLOR MONITOR
PRE DECO(N) BOARD
Block Diagram
C4-904384

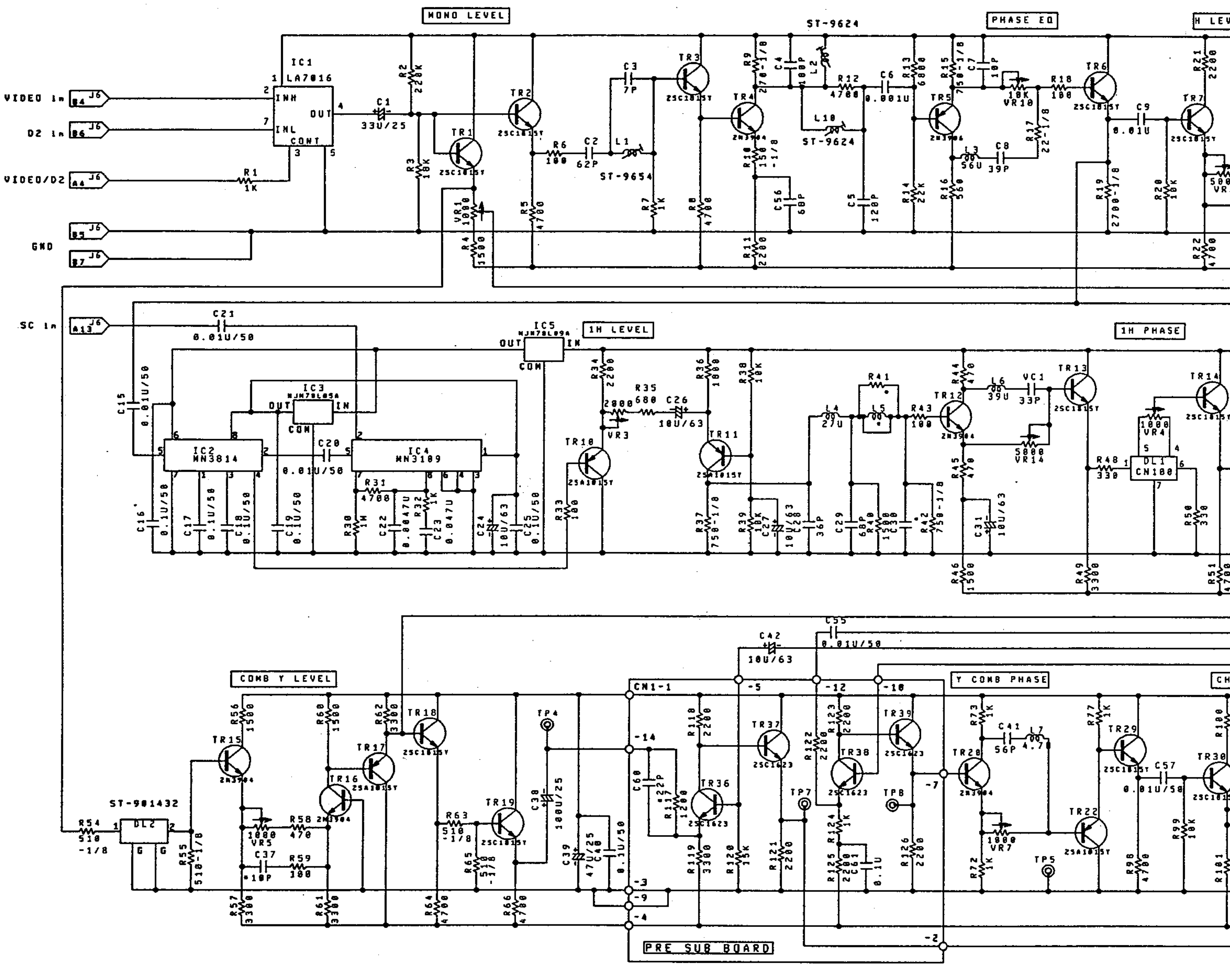


20/30 SERIES
PRE DECO(N) BOARD
PARTS LOCATION
P-70403B

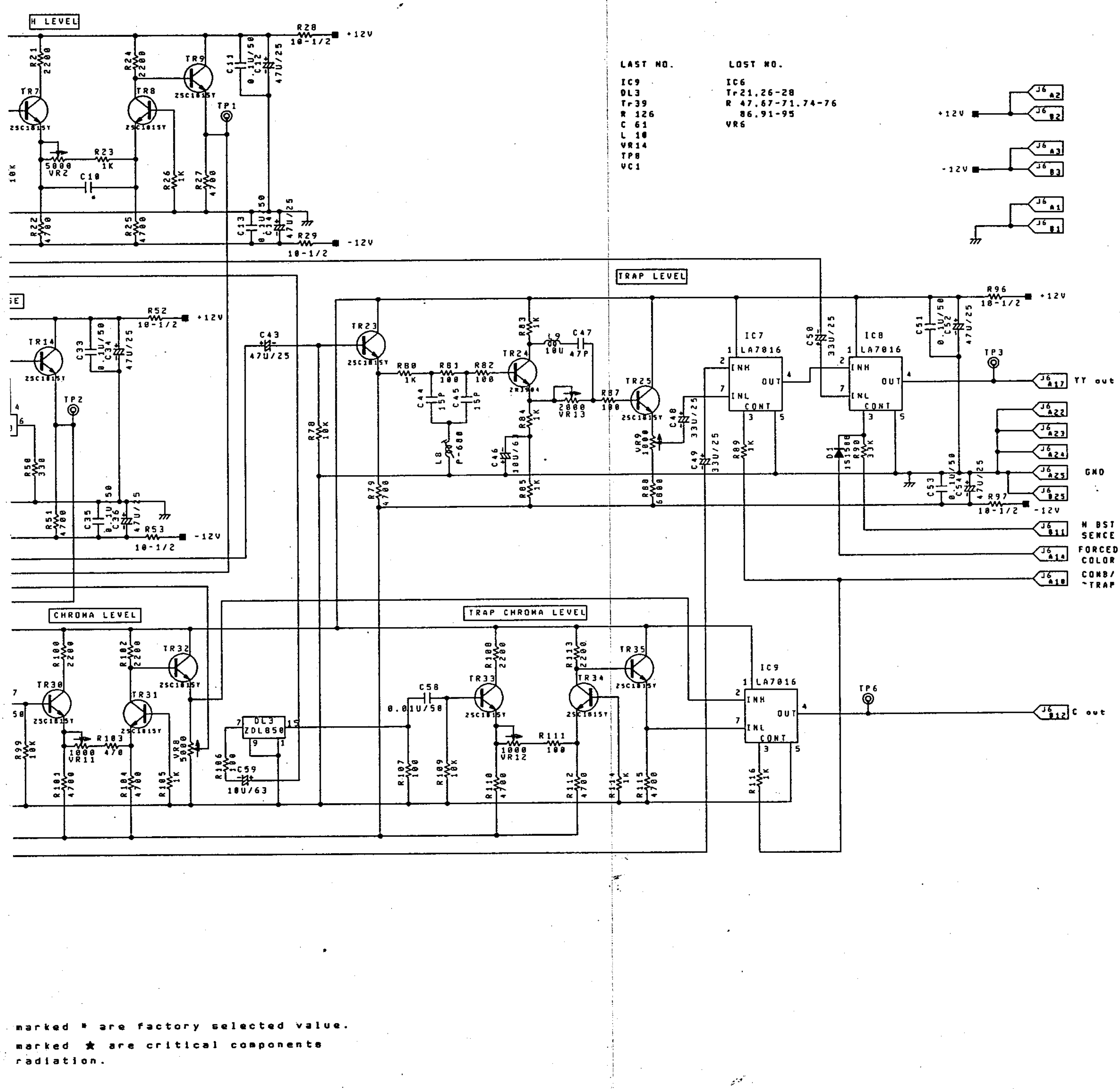




20/30 SERIES
PRE SUB BOARD
PARTS LOCATION
PC-2107



NOTE: 1. All resistors are in ohms 5%(parts marked F:1%), 1/4watt unless otherwise specified.
2. All capacitors are in farads, 300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked
6. Parts marked for X-radiat



LAST NO.	LOST NO.
IC9	IC6
DL3	Tr21,26-28
Tr39	R 47,67-71,74-76
R 126	86,91-95
C 61	VR6
L 10	
VR14	
TP8	
VC1	

marked * are factory selected value.
marked ★ are critical components
radiation.

20/30 SERIES
COLOR MONITOR
PRE DECO(N) BOARD
Schematic Diagram
C21-904198B

2-4-2. DECODER (N)BOARD

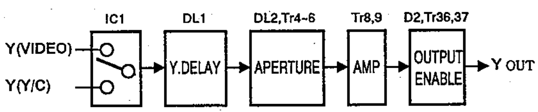
(1) Outline

This board produces the Y, R-Y and B-Y signals from the luminance signal and the color signal which are input, and supplies them to the VIDEO OUT BOARD.

(2) Circuit Description

(a) Y signal processing circuit

The Y signal separated apart from the chroma signal on the PRE DECO(N) BOARD is inputted to IC1. Also, the Y signal of Y/C input is inputted to IC1. One of them is selected and then inputted to 140nsec delay line DL1. The output from this delay line passes through the aperture circuit consisting of Tr4 ~ 6 and DL2, and the Y signal level is adjusted by means of the differential amplifier (Tr8, 9). Then, the back porch of this signal is clamped with Tr11 and the Y signal is supplied to the VIDEO OUT BOARD after passing through the output enable circuit consisting of D2, Tr36 and Tr37.



(b) Chroma signal demodulating circuit

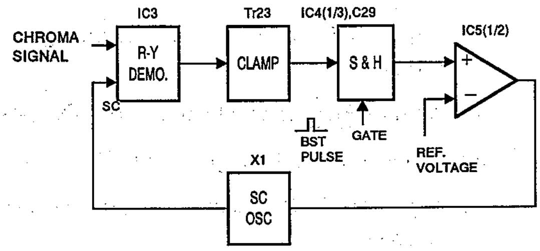
The chroma signal separated apart from the luminance signal on the PRE DECO(N) BOARD is inputted to IC2. Also, the C signal of Y/C input is inputted to IC2. One of them is selected and inputted to IC3 and IC7.

The IC3 and IC7 that are made to apply a sine wave of 3.58MHz from the subcarrier oscillator, perform the demodulation of R-Y and B-Y respectively. The R-Y signal is supplied to the VIDEO OUT BOARD after passing through the output enable circuit consisting of D3, Tr39 and Tr40, and the B-Y signal is supplied to the VIDEO OUT BOARD after passing through the output enable circuit consisting of D4, Tr42 and Tr43.

(c) Color hold circuit

The SYNC portion (including no chroma component) of the demodulated R-Y signal is clamped with Tr23. Then, the burst portion is subject to sampling by means of the sample & hold circuit consisting of IC4 and C29 and the DC voltage is compared with the reference voltage applied to IC5-⑥ pin. The sub-carrier oscillator is controlled according to the result of the comparison, thereby stabilizing the oscillation frequency and phase.

Since the phase of the burst signal crosses the R-Y axis, if the hue is not shifted, when the reference voltage is zero, the color hold is correctly adjusted. Conversely, hue adjustment is carried out by changing the reference voltage at IC5(2/2) and IC6 by the hue control voltage.



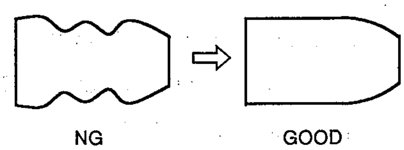
(3) Adjustment Procedure

(a) ***VR1(MATCH)***
VR2(Y LEVEL)
VR12(APT OS)

① Apply a sweep signal to the composite video input terminal.

② Connect the probe to TP9.

③ Adjust VR1 so that the waveform is flat.

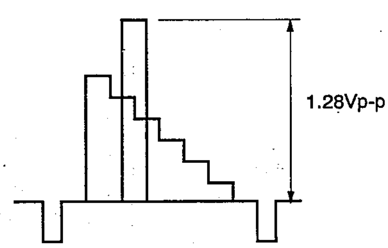


Sweep waveform

④ Apply a color bar signal.

⑤ Set the FORCED COLOR switch on the pull-out panel to "ON" position.

⑥ Adjust VR2 so that the level is 1.28Vp-p.



⑦ Apply a sweep signal.

⑧ Set the aperture level to 20% with the APT switch on the pull-out panel. (Refer to 5-5(1) in the OPERATION MANUAL.)

⑨ Adjust VR12 so that the aperture starts taking effect.

(b) VR6(HUE HIGH)
VR7(HUE LOW)
VR9(HUE OFFSET)
L5

① Apply a color bar signal.

② Connect the probe to TP6.

③ Adjust L5 so that the oscillating level is maximum.

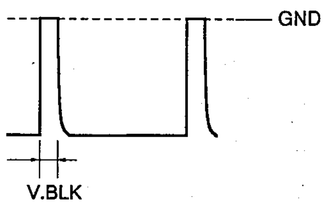
④ Set the HUE manual control to "ON" position.

⑤ Connect the probe to pin ⑦ of IC8.

⑥ Adjust the HUE manual level so that the output is GND.

⑦ Connect the probe to TP8.

⑧ Adjust VR9 so that the period of the vertical blanking is GND. At this time, when the color hold is not obtained, adjust VR3 (COLOR HOLD).



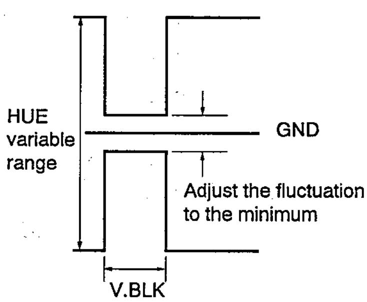
⑨ Connect the probe to pin ⑫ of IC6.

⑩ Adjust VR7 so that the output is GND.

⑪ Connect the probe to TP5.

⑫ Adjust VR6 so that the period of the vertical blanking is GND.

⑬ When the HUE is changed from MIN to MAX, adjust VR7 so that the level fluctuation of the vertical blanking period against GND is minimum.



⑭ Set the HUE manual control to "OFF" position.

(c) VR3 (COLOR HOLD)

① Set the FORCED COLOR switch on the pull-out panel and SYNC EXT switch on the FRONT PANEL respectively to "ON" position.

② Connect the probe to TP602 on the VIDEO OUT BOARD inserted into the SLOT No.5.

③ When attenuating a color bar signal to - 50dB with the attenuator, adjust VR3 so that the color hold is obtained.

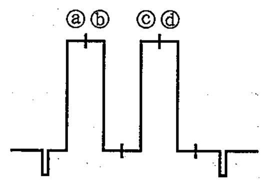
(d) VR5(R-Y LEVEL)
VR8(B-Y LEVEL)
VR10(COMB HUE)
VR11(SUB HUE)
L6

① Apply a color bar signal.

② Connect the probe to TP402 on the VIDEO OUT BOARD.

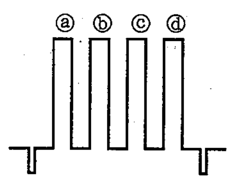
③ Set the HUE level to 50% with the HUE preset switch on the pull-out panel. (Refer to 5-3(2) in the OPERATION MANUAL).

④ Adjust VR5 and VR11 so that the level of portions ⓐ to ⓓ in the figure below is the same.



⑤ Connect the probe to TP602 on the VIDEO OUT BOARD.

⑥ Adjust VR8 and L6 so that the level of portions ⓐ to ⓓ in the figure below is the same.



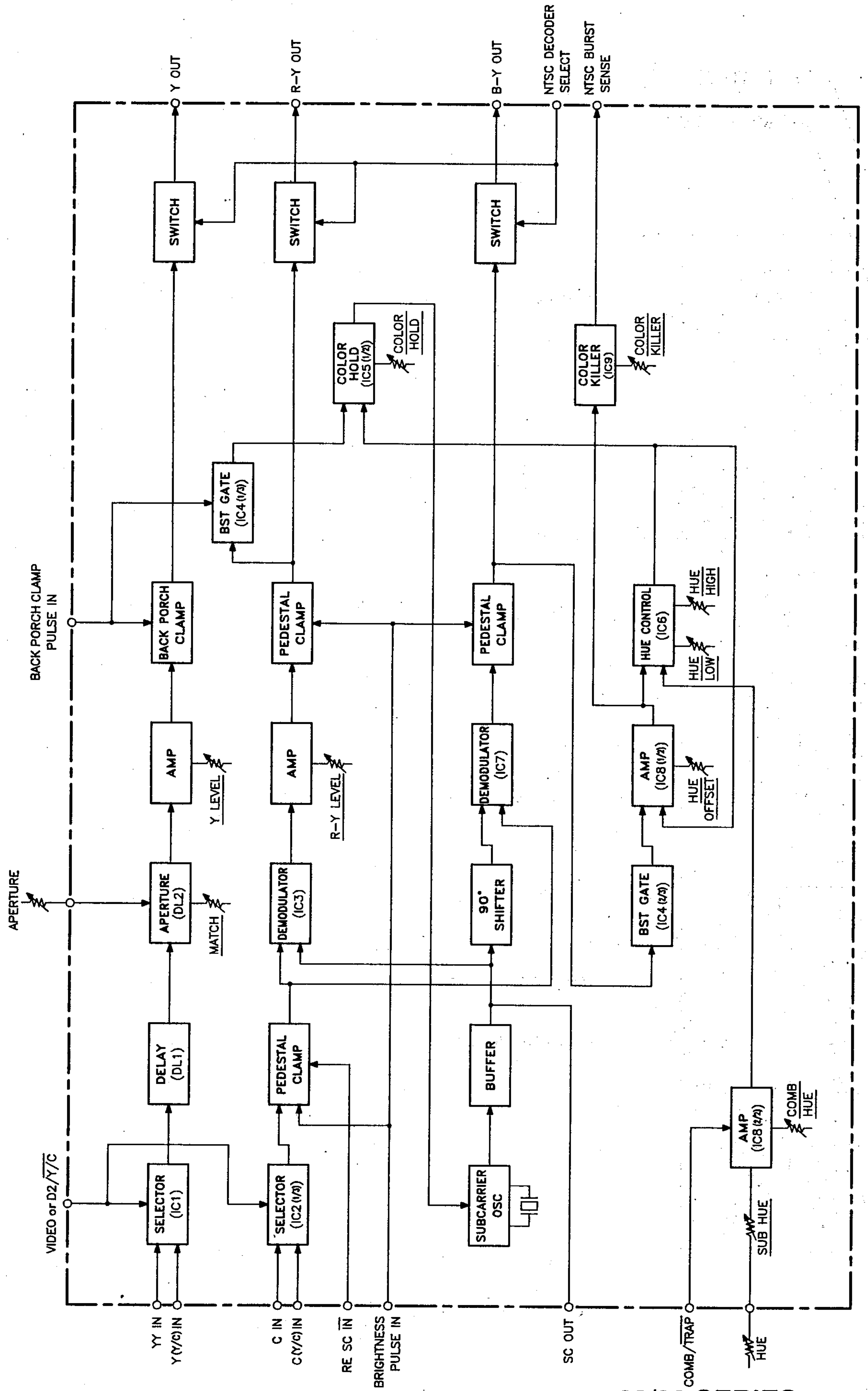
⑦ When the COMB switch is switched on/off, adjust the HUE shifting (level shifting of portions ⓑ and ⓒ above) with VR10 with the COMB switch "ON".

(e) VR4(COLOR KILLER)

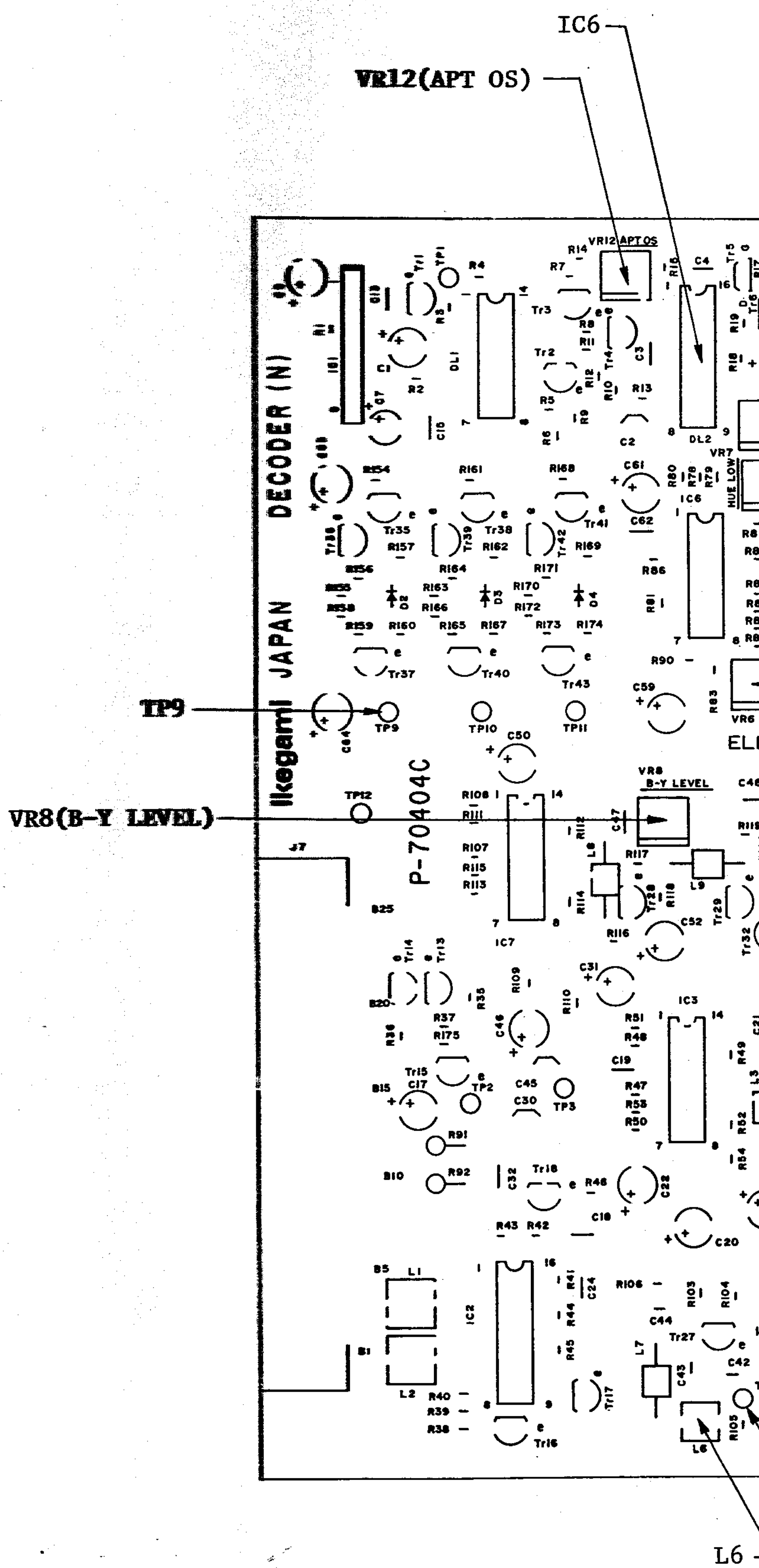
① Set the [FORCED COLOR] switch to “OFF” position.

② Connect the probe to TP602 on the VIDEO OUT BOARD.

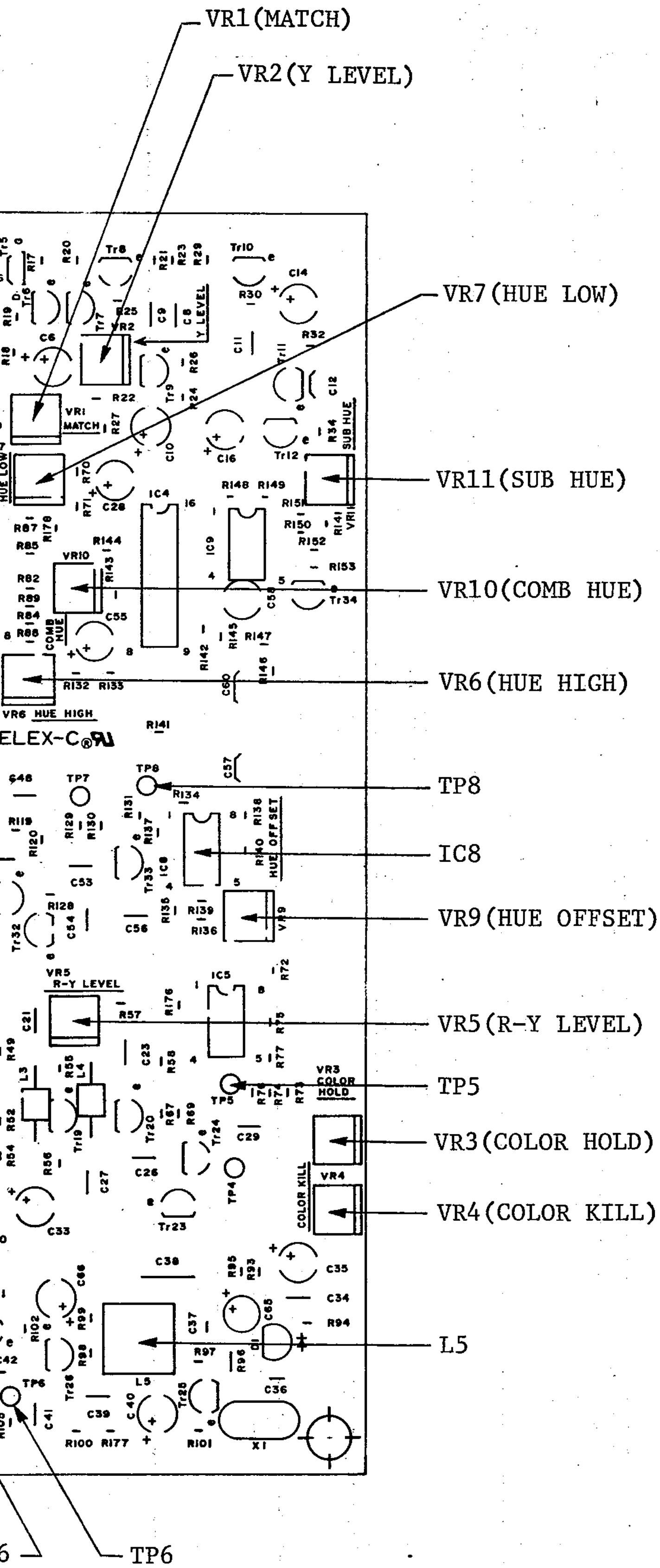
③ When attenuating a color bar signal to - 18dB with the attenuator, adjust VR4 so that the color killer operates.

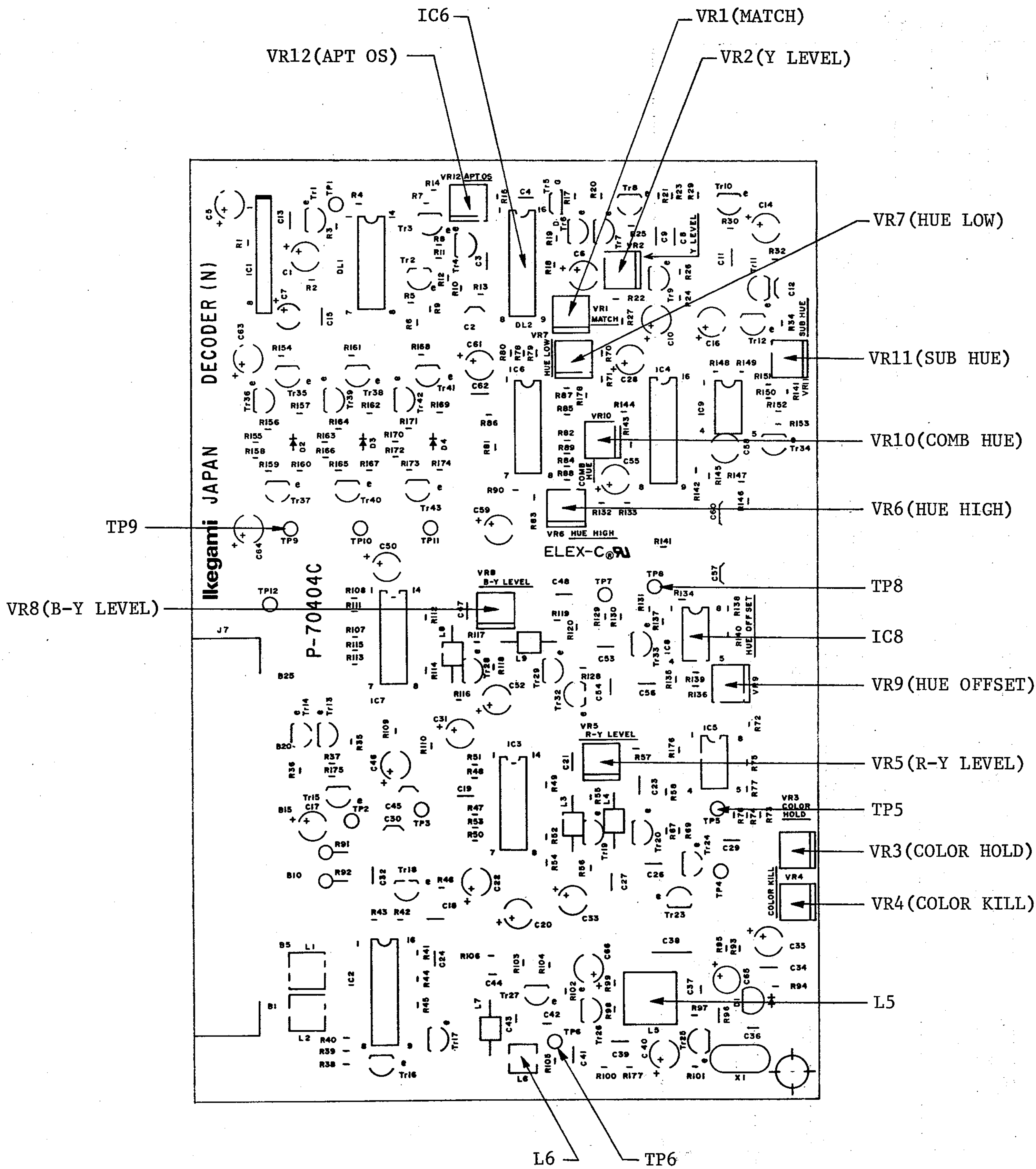


20/30 SERIES
COLOR MONITOR
DECODER(N) BOARD
Block Diagram
C3-904326

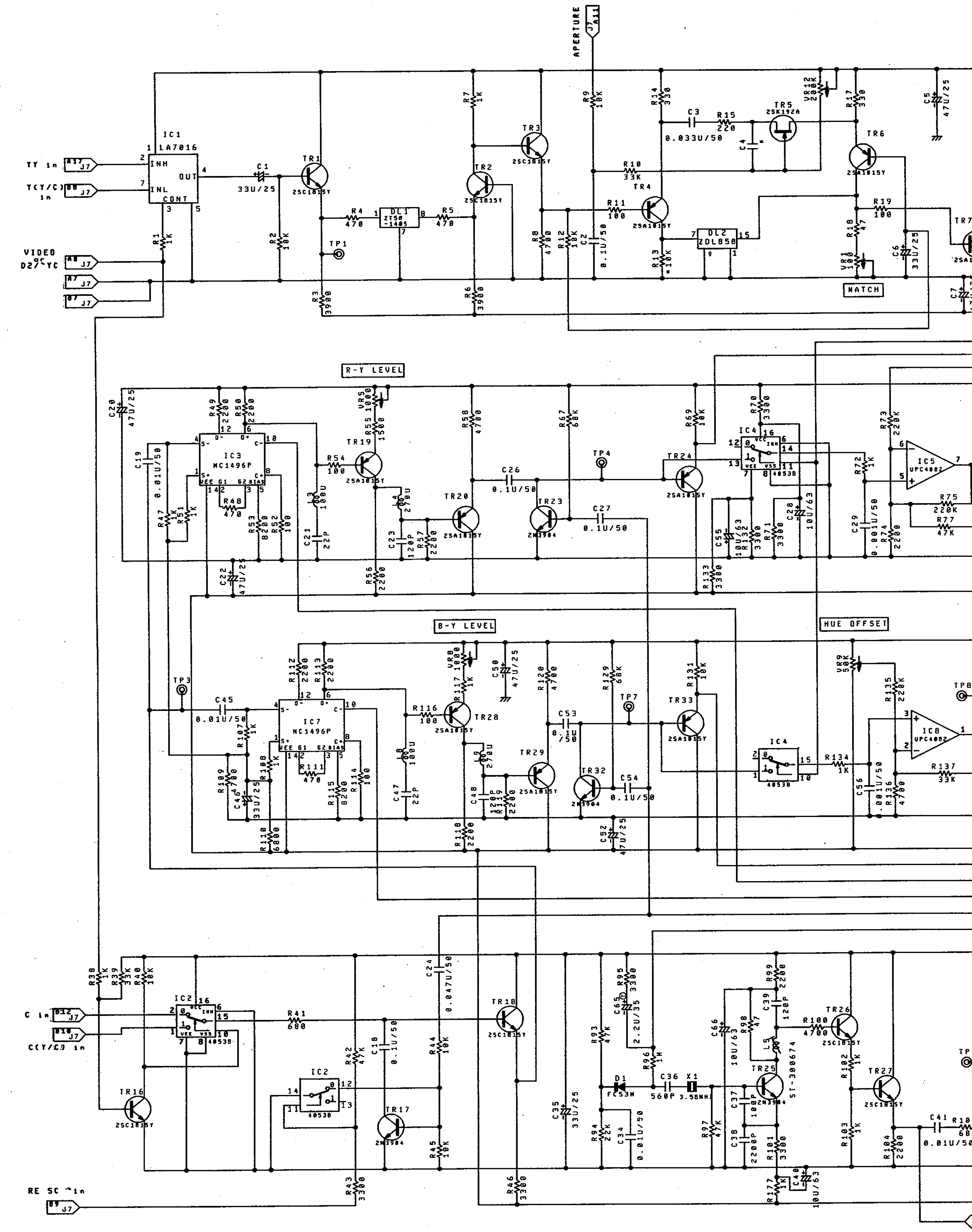


20/30 SERIES
DECODER(N) BOARD
PARTS LOCATION
P-70404C

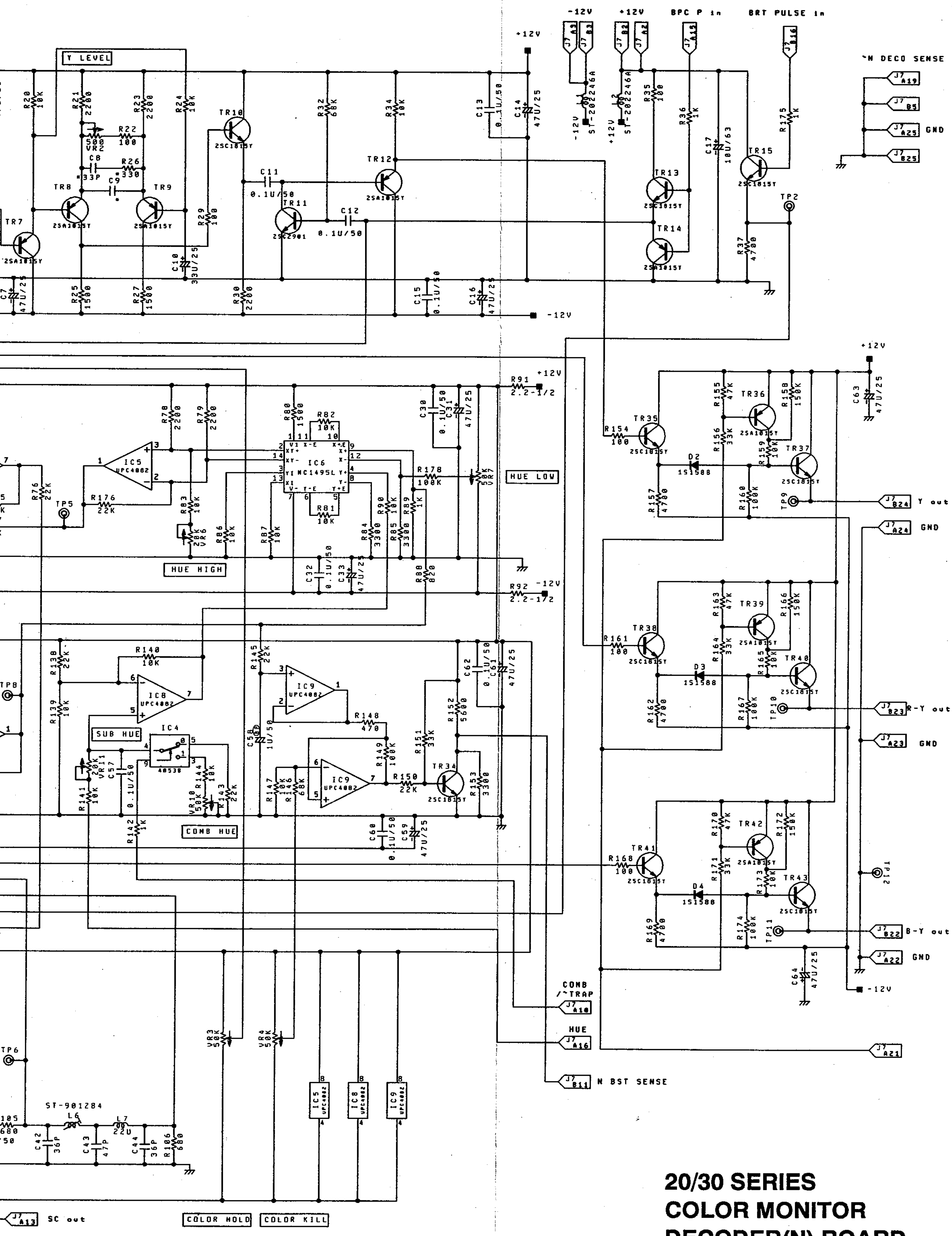

VR1(MATCH)
VR2(Y LEVEL)
VR7(HUE LOW)
VR11(SUB HUE)
VR10(COMB HUE)
VR6(HUE HIGH)
TP8
IC8
VR9(HUE OFFSET)
VR5(R-Y LEVEL)
TP5
VR3(COLOR HOLD)
VR4(COLOR KILL)
L5
TP6



IC6
VR1(MATCH)
VR12(APT OS)
VR2(Y LEVEL)
VR7(HUE LOW)
VR11(SUB HUE)
VR10(COMB HUE)
VR6(HUE HIGH)
TP9
TP8
VR8(B-Y LEVEL)
IC8
VR9(HUE OFFSET)
VR5(R-Y LEVEL)
TP5
VR3(COLOR HOLD)
VR4(COLOR KILL)
L5
L6
TP6
DECODER (N)
Ikegami JAPAN
P-70404C
ELEX-C



NOTE: 1. All resistors are in ohms 5%(parts marked F:1%), 1/4watt unless otherwise specified.
2. All capacitors are in farads, 300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.



LAST NO.

IC9	D4
DL2	VR12
Tr43	R178
L9	C66

LOST NO.

Tr	21,22,30,31
R	16,28,31,33,59-66 68,121-128,130
C	25,49,51

20/30 SERIES
COLOR MONITOR
DECODER(N) BOARD
Schematic Diagram
C11-904197A

2-5. PAL-B DECODER

2-5-1. DECODER(P)BOARD

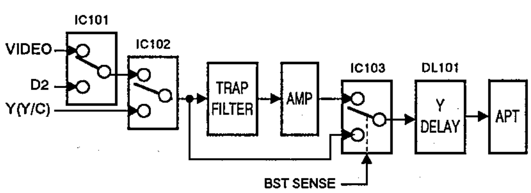
(1) Outline

This board separates the composite signal into the luminance signal and color signal, and supplies the separated luminance signal (or the Y signal of the Y/C input) and the R-Y and B-Y signals produced from the separated color signal (or the C signal of the Y/C input) to the VIDEO OUT BOARD.

(2) Circuit Description

(a) Y signal process circuit

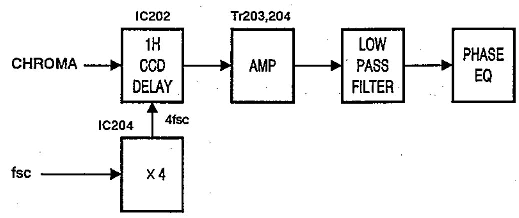
The VIDEO signal supplied from the INTERFACE BOARD is inputted to IC101. Also, the D2 signal is inputted to IC101. One of them is selected and outputted from IC101-④ pin. The subcarrier component of this signal is removed by the subcarrier trap filter circuit consisting of L101 and C102 and the phase compensation is performed by the phase equalizer consisting of L102, L103, C103 and C104.
The differential amplifier consisting of Tr104 and Tr105 serves to compensate the drop of the level by the filter circuit.
This signal or Y signal at Y/C input is selected with the analog switch of IC103 and inputted to the delay line DL101 to compensate the delay with the chroma circuit. The output enters the aperture
circuit consisting of Tr109, Tr110, Tr111 and DL102.



(b) 1H CCD delay line

The 4.43MHz subcarrier signal(fsc) sent from the subcarrier oscillating circuit is inputted to IC204-② pin, this frequency is quadrupled (4fsc) at IC204 and it is outputted to pin ⑤.
The 1H CCD delay line IC203 operates using the 4fsc signal as a clock signal. Thus the chroma signal that is delayed for 1H is outputted from IC202-④ pin.

This signal passes through the differential amplifier of Tr203 and Tr204, so that the clock component is removed by the low-pass filter consisting of C216, C218 and L204.
Then , the phase compensation is performed by the phase equalizer consisting of Tr205, L206, VC201 and R226.



(c) Chroma signal demodulation circuit

Only the chroma component is picked out from the signal outputted from IC201-④ pin by the band-pass filter consisting of L201, L202,L203, C201, C243 and C202, and it is inputted to ⑪ pin of the demodulator IC208.
The IC208 incorporates the band amplifier circuit, color hold circuit and demodulating circuit. The R-Y signal is outputted from ㉖ pin and the B-Y signal is outputted from ㉗ pin.

(3) Adjustment Procedure

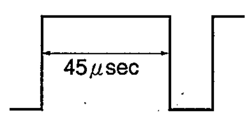
Set VR206 (CHROMA LEVEL) to the center position.

(a) VR303(HP WID)
VR304(EQ KILL)

① Apply a color bar signal.

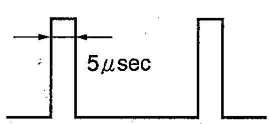
② Connect the probe to TP306.

③ Adjust VR304 so that the pulse width is 45μ sec.



④ Connect the probe to TP307.

⑤ Adjust VR303 so that the pulse width is 5μ sec.

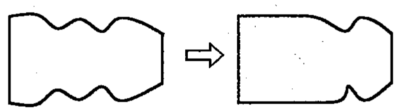


(b) VR101(TRAP LEVEL)
VR102(MATCH)
VR103(Y LEVEL)
VR104(APT OS)
L101 L102 L103

① Apply a sweep signal.

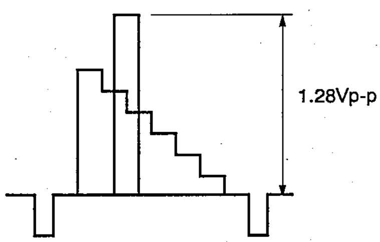
② Connect the probe to TP302.

③ Adjust VR102 so that the frequency characteristics of the low-to-middle frequency is flat.



④ Apply a color bar signal.

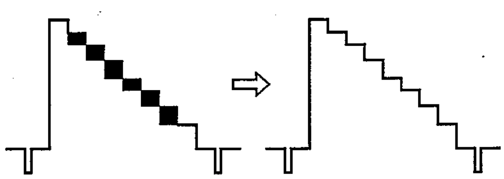
⑤ Adjust VR103 so that the level is 1.28Vp-p.



⑥ Set the [FORCED COLOR] switch on the pull-out panel to "ON" position.

⑦ Adjust VR101 so that the level is 1.28Vp-p.

⑧ Adjust L101 to eliminate the sub carrier.



⑨ Apply a sweep signal.

⑩ Set the [FORCED COLOR] switch to "OFF" position.

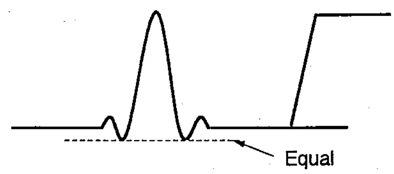
⑪ Set the aperture level to 20% with the [APT] preset switch on the pull-out panel. (Refer to 5-5(1) in the OPERATION MANUAL.)

⑫ Adjust VR104 so that the aperture starts taking effect.

⑬ Apply a 2T pulse signal.

⑭ Set the [FORCED COLOR] switch to "ON" position.

⑮ Adjust L102 and L103 so that the right pulse is the same level as the left pulse.



(c) L201 L202

① Apply a sweep signal.

② Connect the probe to TP202.

③ Adjust L201 and L202 so that the frequency characteristics of 4.43MHz ± 0.5MHz is flat.

(d) VR203(COLOR HOLD)

① Apply a color bar signal.

② Set the [FORCED COLOR] and [SYNC EXT] switches respectively to "ON" position.

③ Connect the probe to TP304.

④ When attenuating a color bar signal to − 50dB with the attenuator, adjust VR203 so that the color hold is obtained.

(e) VR201(1H LEVEL) VR202
VR204(S-LEVEL) VR205(R-Y MIX)
VR207(PHASE) VR208
VR301(R-Y LVL) VR302 (B-Y LVL)
VC201

① Apply a color bar signal.

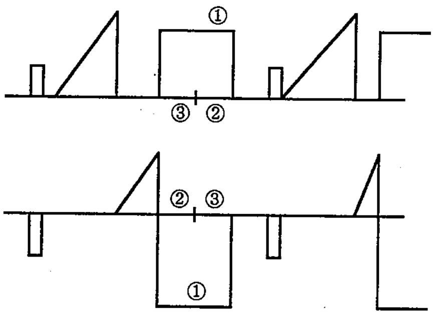
② Set the oscilloscope mode to "ALT", and connect the probes to TP303 and TP304.

③ Adjust VC201 so that the line crawling of both the waveforms is minimum.

④ Apply a ANTI PAL signal.

⑤ Adjust VR201, VR202, VR207, VR208 and VC201 so that ① to ③ in the figure below are aligned.

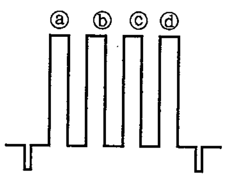
⑥ Repeat steps ① to ⑤.
If the ANTI PAL adjustment can not be done, adjust VR205.



⑦ Apply a color bar signal.

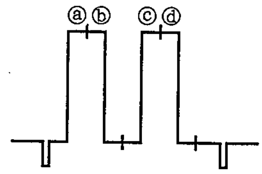
⑧ Connect the probe to TP602 on the VIDEO OUT BOARD inserted into the SLOT No.4.

⑨ Adjust VR302 so that the level of portions ⓐ to ⓓ in the figure below is the same.

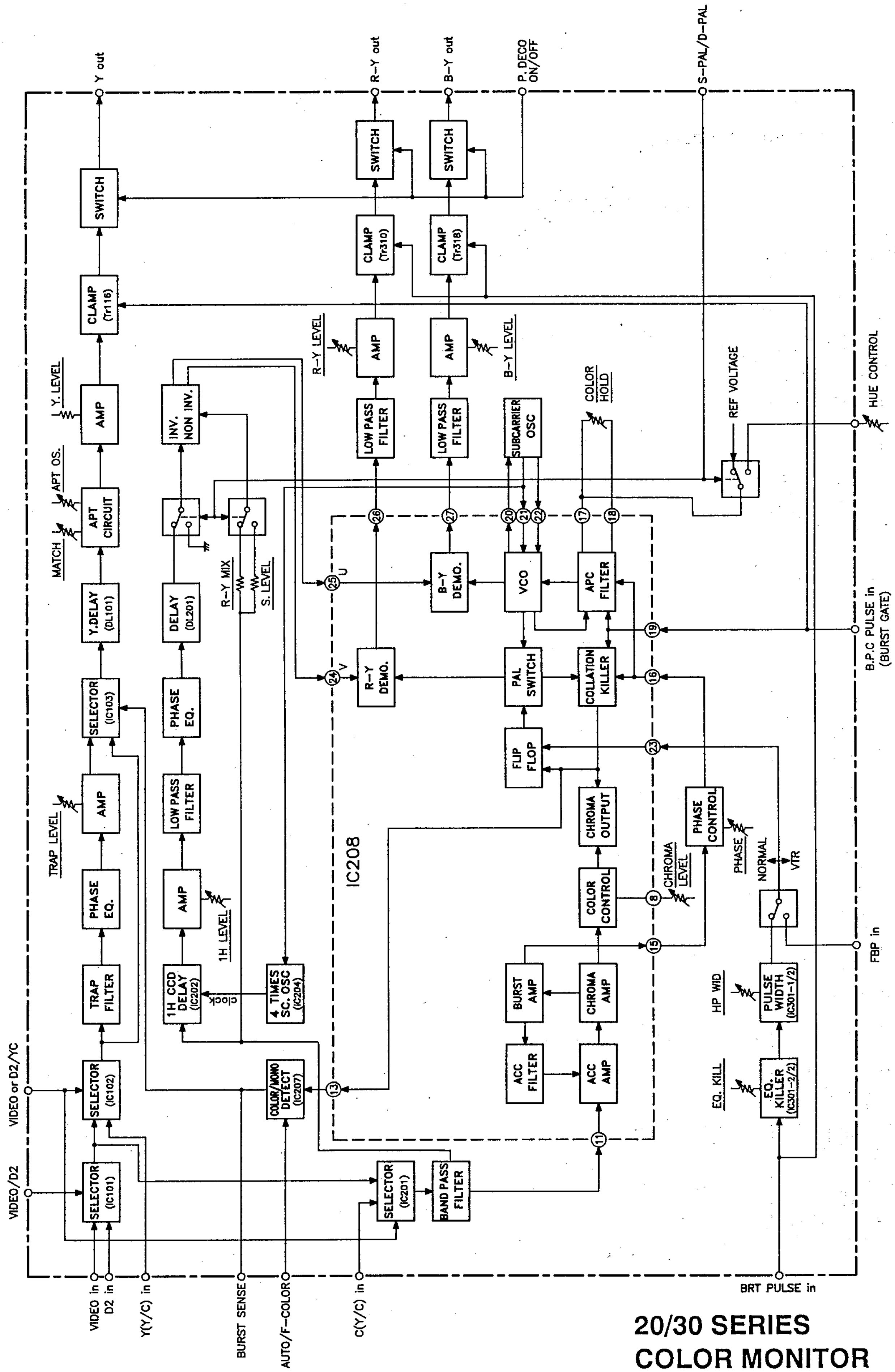


⑩ Connect the probe to TP402 on the VIDEO OUT BOARD.

⑪ Adjust VR301 so that the level of portions ⓐ to ⓓ in the figure below is the same.

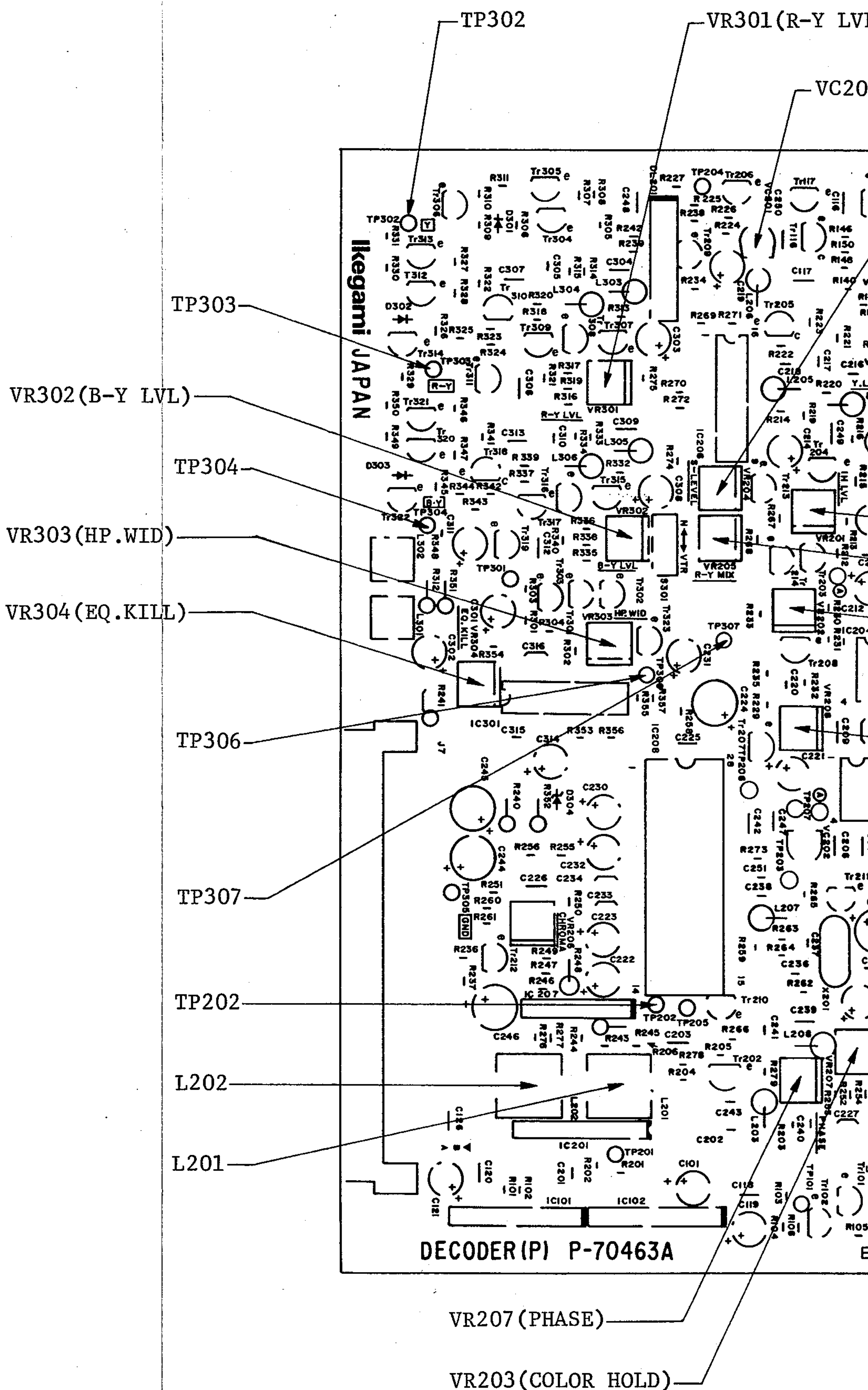


⑫ When the [S-PAL] switch is switched on/off, adjust VR204 so that the level of both the waveforms is the same.

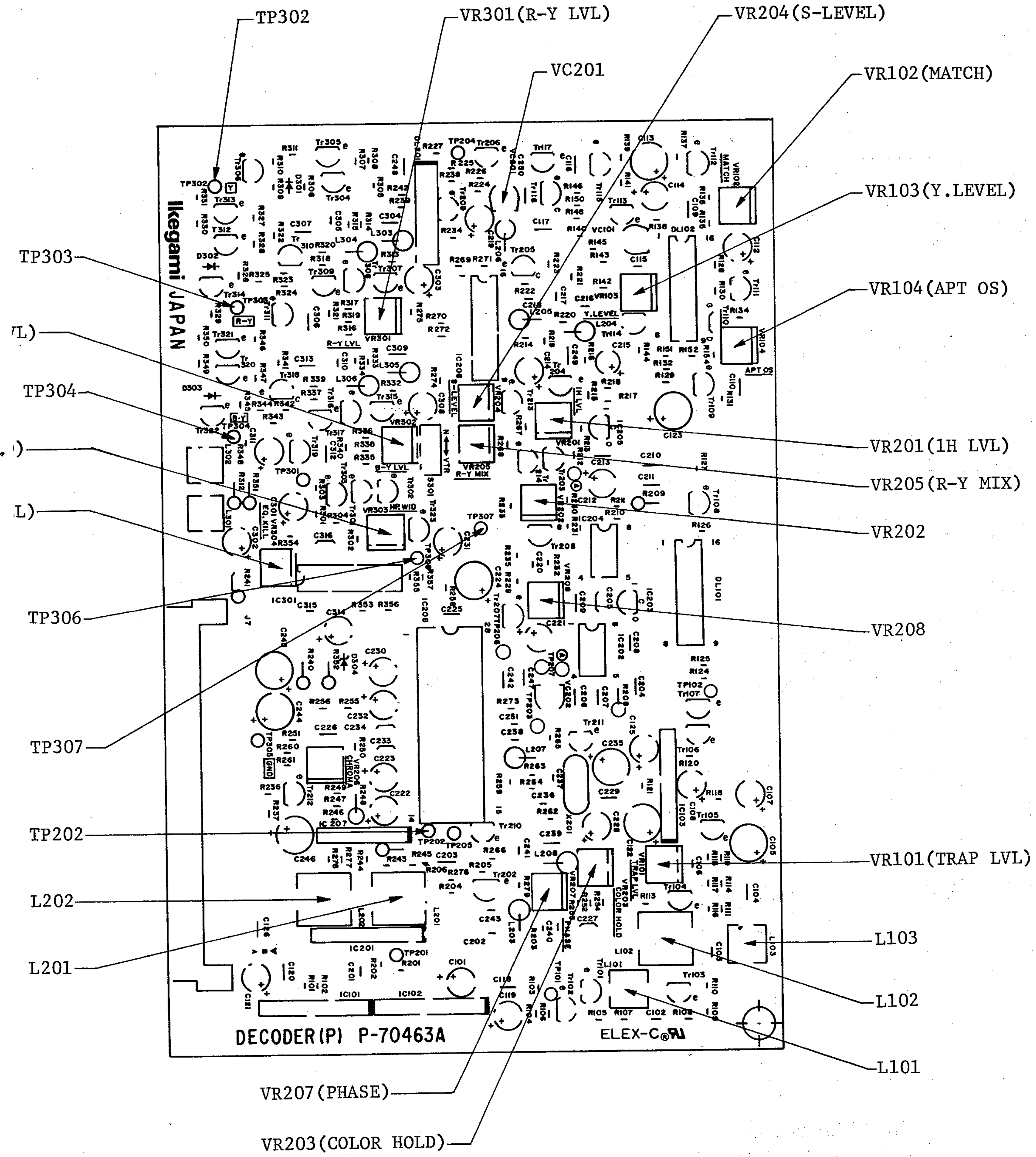


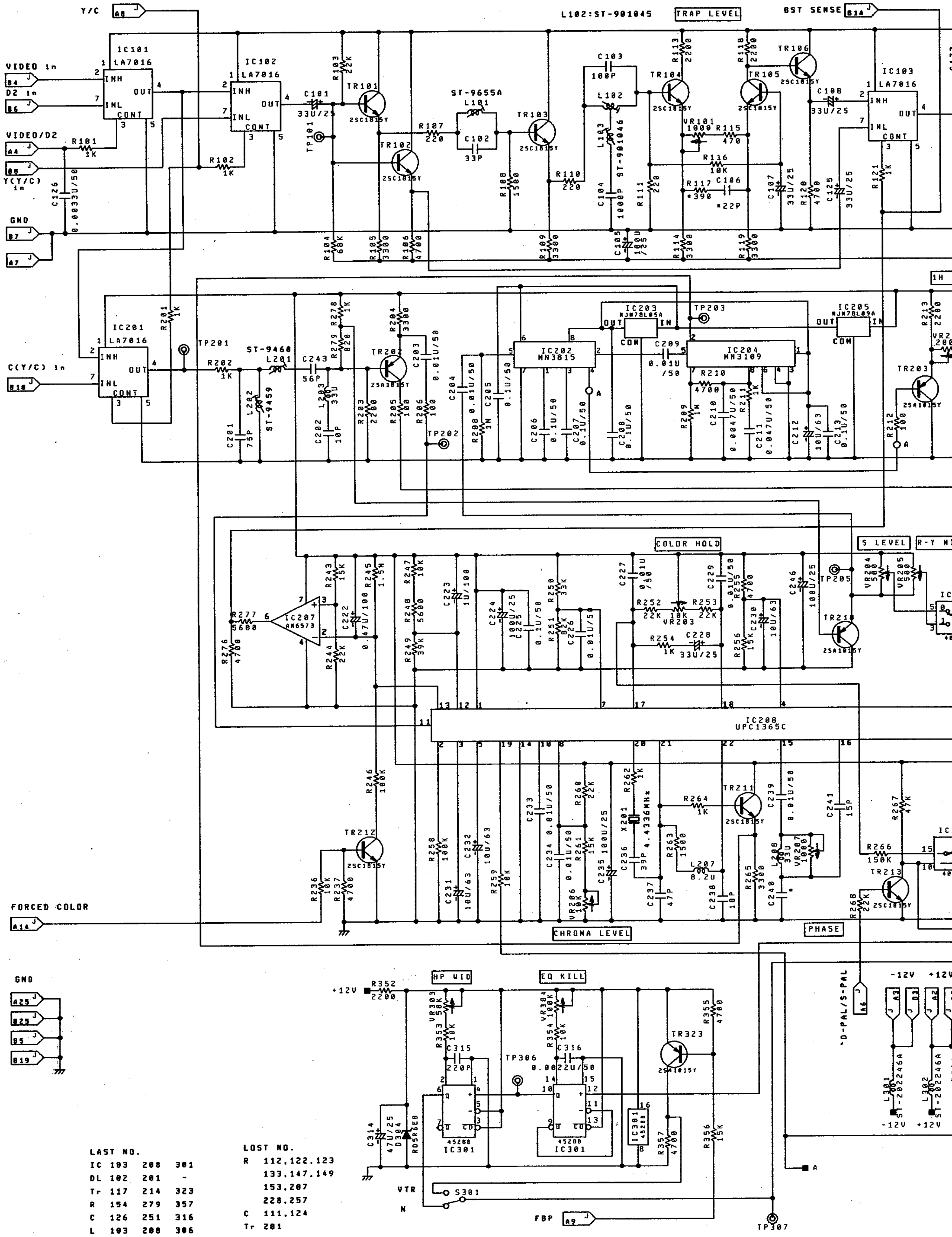
20/30 SERIES COLOR MONITOR DECODER(P) BOARD Block Diagram

C4-904386



20/30 SERIES
DECODER(P) BOARD
PARTS LOCATION
P-70463A


TP302
VR301(R-Y LVL)
VR204(S-LEVEL)
VC201
VR102(MATCH)
VR103(Y.LEVEL)
TP303
VR104(APT OS)
TP304
VR201(1H LVL)
VR205(R-Y MIX)
VR202
TP306
VR208
TP307
TP202
VR101(TRAP LVL)
L202
L201
L103
L102
L101
VR207(PHASE)
VR203(COLOR HOLD)
Ikegami JAPAN
DECODER(P) P-70463A
ELEX-C



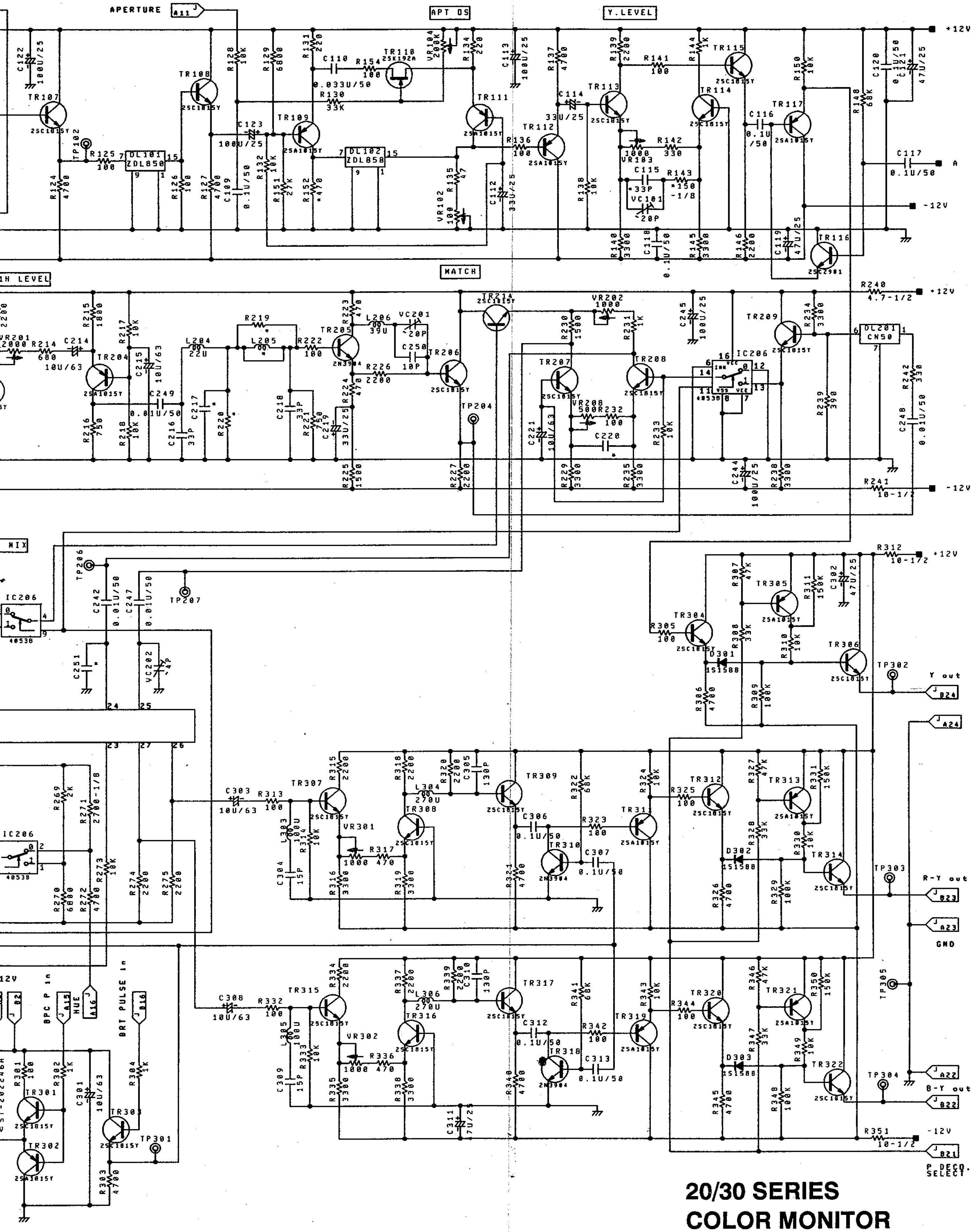
LAST NO.

IC	103	208	301
DL	102	201	-
Tr	117	214	323
R	154	279	357
C	126	251	316
L	103	208	306
VR	104	208	304
D	-	-	304
TP	102	207	307

LOST NO.

R	112,122,123,133,147,149,153,207,228,257
C	111,124
Tr	201

NOTE: 1. All resistors are in ohms ... F:1%), 1/4watt unless othe...
2. All capacitors are in fara... otherwise specified.
3. All inductors are in henly... specified.
4. Waveforms are taken with a...



s 5%(parts marked
therwise specified.
rads,300V unless

ly unless otherwise

a color bar signal

5.Parts marked * are factory selected value.
6.Parts marked ★ are critical components for X-radiation.

20/30 SERIES COLOR MONITOR DECODER(P) BOARD Schematic Diagram C11-904264C

2-6. VIDEO OUT BOARD
〈Fixed in SLOT No.4〉

(1) Outline

The Y signal and the color difference signals are matrixed, the level of the R, G and B signals controlled, and these signals supplied to the RGB OUT BOARD.

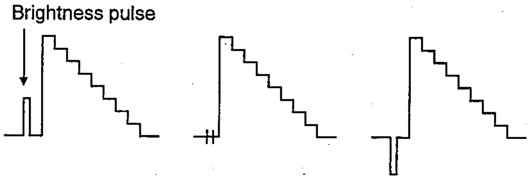
(2) Circuit Description

(a) Contrast, chroma control circuit

The Y signal that is outputted from each circuit is subject to gain control by IC201 according to the contrast level. The R-Y and B-Y signals are subject to gain control at IC101 and IC301 respectively according to the level attained by multiplying the chroma level by the contrast level at IC701.

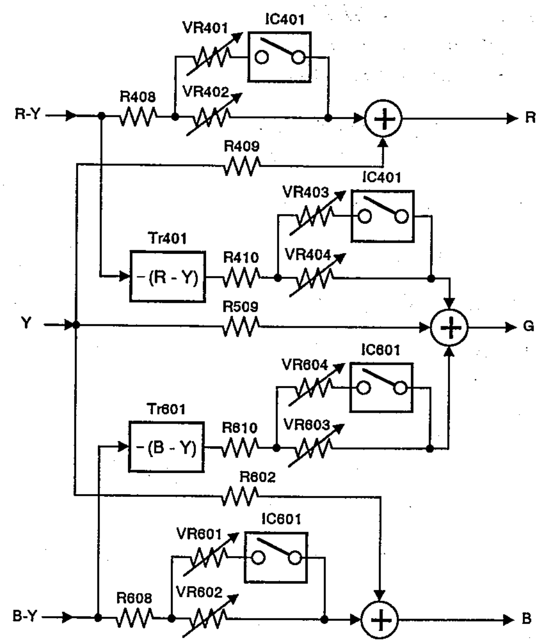
(b) Brightness addition circuit

The Y signal that is subject to contrast control is clamped to GND by Tr208 and a brightness pulse is added to the SYNC portion by means of the analog switch of IC102(2/3).



(c) RGB matrix circuit

The R signal and B signal are produced from the R-Y signal and B-Y signal by the resistance matrix with the Y signal. The G signal is produced by the respective resistance matrixes of the Y signal, -(R-Y) signal and -(B-Y) signal. When the matrix switch is turned on, the analog switch of IC401 and IC601 are turned on to change the matrix ratio, highlighting the red.



(d) Gain control circuit

The brightness pulse portion of each separated R, G and B signal is clamped by Tr407, 507 and 607 and mixed with a character signal and a safe title signal by means of the analog switch of IC402. Then, it is subject to gain control at IC403, 503 and 603 according to the gain level so that each signal is supplied to the RGB OUT BOARD.

(3) Adjustment Procedure

Be sure to set the following condition before the adjustment.

① Apply a 75% color bar signal of YPBPR (Y: 0.7Vp-p, PB,PR: 0.525Vp-p) to the AUX input terminals.

② Set the "RGB/YPbPr" selection to the "YPbPr" mode on the MENU screen. Then set the "YPbPr MODE" selection to the "MODE 1" mode. (Refer to 5-6 in the OPERATION MANUAL for details on the MENU setting method.)

③ Set the AUX switch on the front panel to "ON" position.

④ Set the CHROMA to 50% (preset) with the CHROMA switch on the pull-out panel.

(a) VR701(CHROMA LEVEL)

① Set VR701 to the center position as the first setting.

(b) VR702(OFF SET)
VR703(CONT O.S)
VR704(CHROMA O.S)

① Set the CHROMA and CONT switches on the front panel to the "MANUAL" state.

② Connect the probe to TP701.

③ Set the CHROMA and CONTRAST to MIN.

④ Adjust VR702 so that the DC voltage is 0V.

⑤ Set the CHROMA to MAX and set the CONTRAST to MIN.

⑥ Adjust VR703 so that the DC voltage is 0V.

⑦ Set the CHROMA to MIN and set the CONTRAST to MAX.

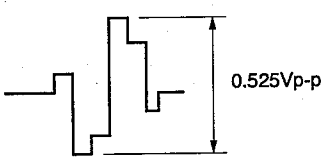
⑧ Adjust VR704 so that the DC voltage is 0V.

⑨ Repeat ③ to ⑧.

(c) VR101(R-Y OPT LVL)

① Connect the probe to TP105.

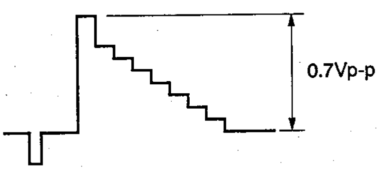
② Adjust VR101 so that the R-Y signal level is 0.525Vp-p.



(d) VR201(Y OPT LVL)

① Connect the probe to TP205.

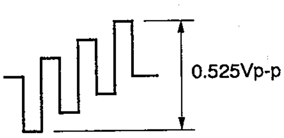
② Adjust VR201 so that the Y signal level is 0.7Vp-p.



(e) VR301(B-Y OPT LVL)

① Connect the probe to TP305.

② Adjust VR301 so that the B-Y signal level is 0.525Vp-p.

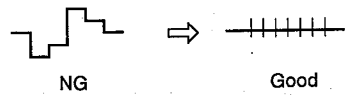


(f) VR102(R-Y OFFSET)
VR103(R-Y GAIN)

① Connect the probe to TP102.

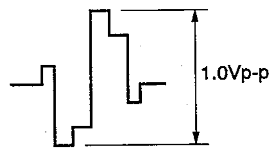
② Set the CHROMA switch on the front panel to the "MANUAL" state and set the CHROMA to MIN.

③ Adjust VR102 to eliminate the signal component as shown in the figure below.



④ Set the CHROMA switch to the "PRESET" state. And set the CONT switch to the "MANUAL" state and set the CONTRAST to MAX.

⑤ Adjust VR103 so that the level is 1.0Vp-p.

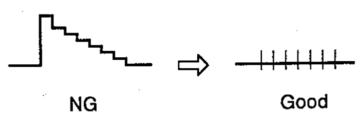


(g) VR202(Y OFFSET)
VR203(Y GAIN)

① Connect the probe to TP202.

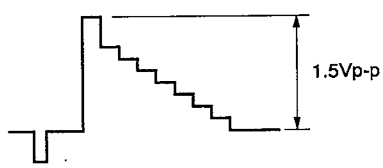
② Set the CONT switch to the "MANUAL" state and set the CONTRAST to MIN.

③ Adjust VR202 to eliminate the singal component as shown in the figure below.



④ Set the CONTRAST to MAX.

⑤ Adjust VR203 so that the level is 1.5Vp-p.

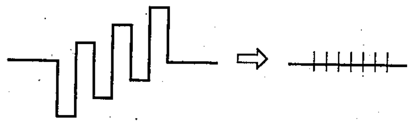


(h) VR302(B-Y OFFSET)
VR303(B-Y GAIN)

① Connect the probe to TP302.

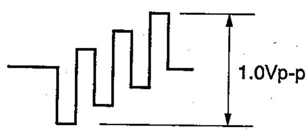
② Set the CHROMA switch to the "MANUAL" state and set the CHROMA to MIN.

③ Adjust VR302 to eliminate the signal component as shown in the figure below.



④ Set the [CHROMA] switch to the "PRESET" state. And set the [CONT] switch to the "MANUAL" state and set the CONTRAST to MAX.

⑤ Adjust VR303 so that the level is 1.0Vp-p.

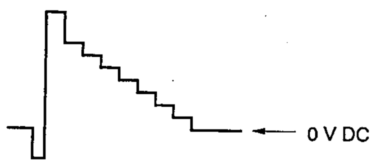


(i) VR105(R-Y DC)
VR205(Y DC)
VR305(B-Y DC)

① Set the [CONT] and [CHROMA] switches to the "PRESET" state.

② Connect the probe to TP203.

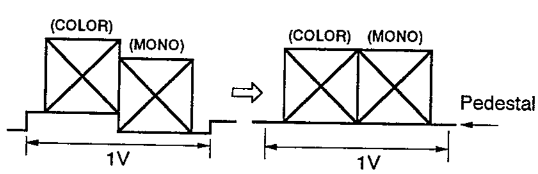
③ Adjust VR205 so that the pedestal DC voltage is 0V.



④ Connect the probe to TP401.

⑤ Press the [MONO] switch for 2 seconds to get the "SPLIT " state.

⑥ Adjust VR105 so that the pedestal level of COLOR part is the same as that of MONO part.



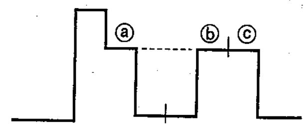
⑦ Connect the probe to TP601.

⑧ Adjust VR305 in the same manner as ⑥.

(j) VR402(R.BAL)

① Connect the probe to TP401.

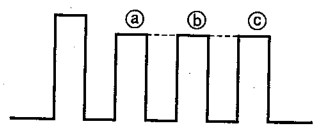
② Adjust VR402 so that the level of ⓐ, ⓑ, and ⓒ is the same in the figure below.



(k) VR602(B. BAL)

① Connect the probe to TP601.

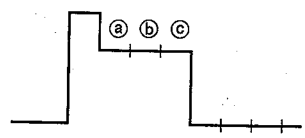
② Adjust VR602 so that the level of ⓐ, ⓑ, and ⓒ is the same in the figure below.



(l) VR404(GR. BAL)
VR603(GB.BAL)

① Connect the probe to TP501.

② Adjust VR404 and VR603 so that the level of ⓐ, ⓑ, and ⓒ is the same in the figure below.



(m) VR406(RC SET)
VR506(GC SET)
VR606(BC SET)

① Connect the probe to TP402.

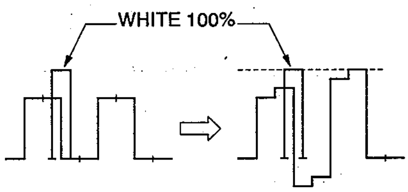
② Adjust VR406 so that the DC voltage of the pedestal is 1.7V.

③ In the same manner, adjust VR506 at TP502 and adjust VR606 at TP602.

(n) ***VR401(MTX R BAL)***
VR403(MTX GR BAL)
VR601(MTX B BAL)
VR604(MTX GB BAL)

① Connect the probe to TP402.

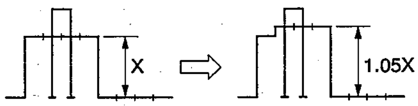
② Adjust VR401 to attain the figure below with the MATRIX IN switch "ON"



⟨MATRIX OFF⟩ ⟨MATRIX ON⟩

③ Connect the probe to TP502.

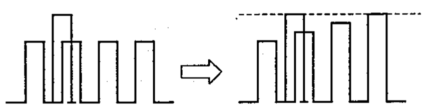
④ Adjust VR403 and VR604 to attain the figure below with the MATRIX IN switch "ON".



⟨MATRIX OFF⟩ ⟨MATRIX ON⟩

⑤ Connect the probe to TP602.

⑥ Adjust VR601 to attain the figure below with the MATRIX IN switch "ON".



⟨MATRIX OFF⟩ ⟨MATRIX ON⟩

(o) ***VR204(VS BRT)***

① Connect the probe to TP203.

② Set the "V/VS" selection to the "V" mode on the MENU screen. (Refer to 5-6 in the OPERATION MANUAL for details on the MENU setting method.)

③ Set the brightness pulse to the pedestal position with the BRIGHT control on the front panel.

④ Set the "V/VS" selection to the "VS" mode.

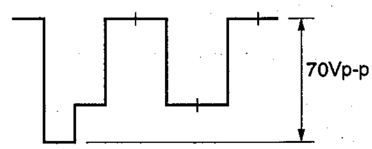
⑤ Adjust VR204 to set the brightness pulse to the set-up position.

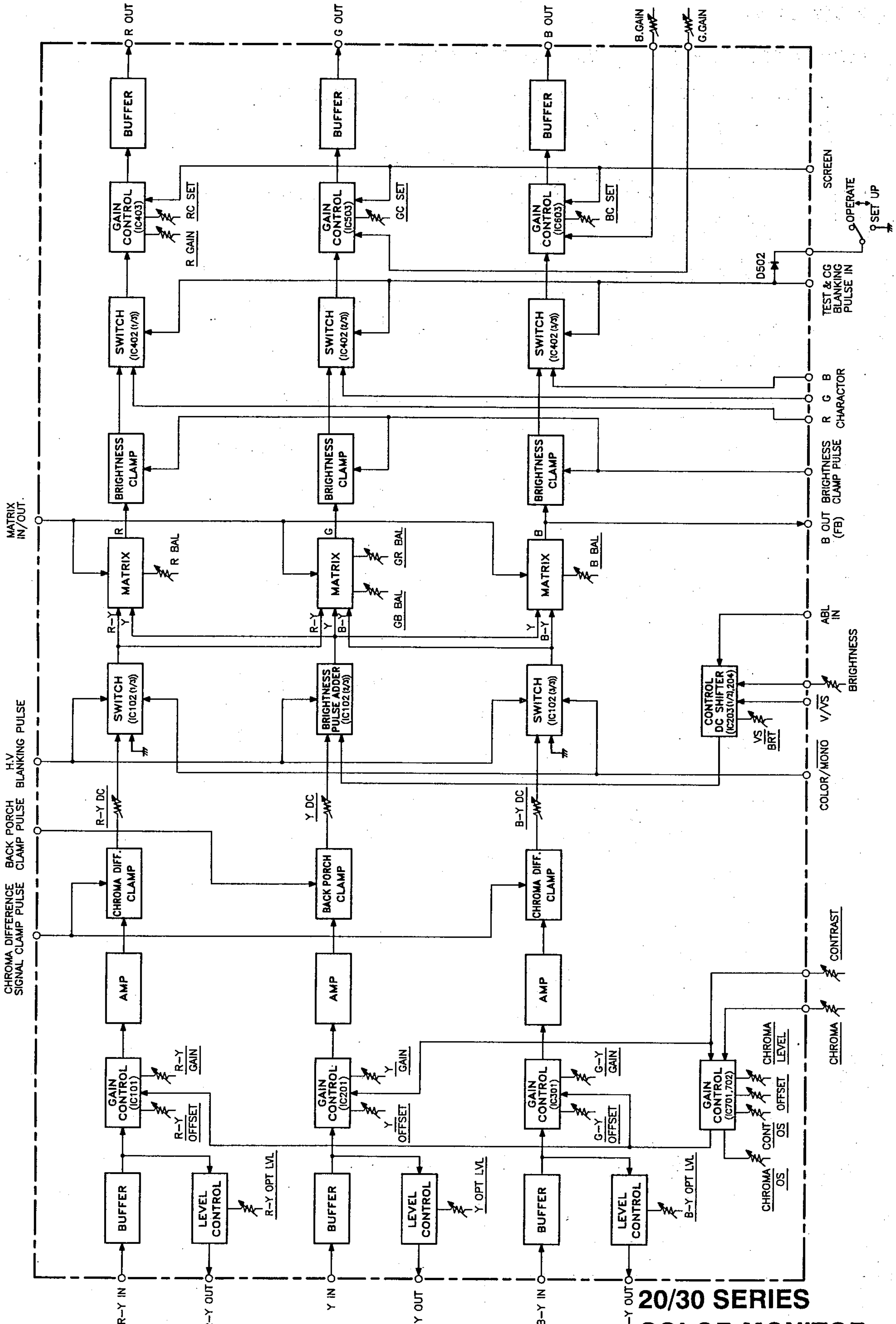
(p) ***VR405(R. GAIN)***

① Connect the probe to TP101 on the RGB OUT BOARD.

② Set the CHROMA switch to the "PRESET" state. And set the CONT switch to the "MANUAL" state and set the CONTRAST to MAX.

③ Adjust VR405 so that the level is 70Vp-p.

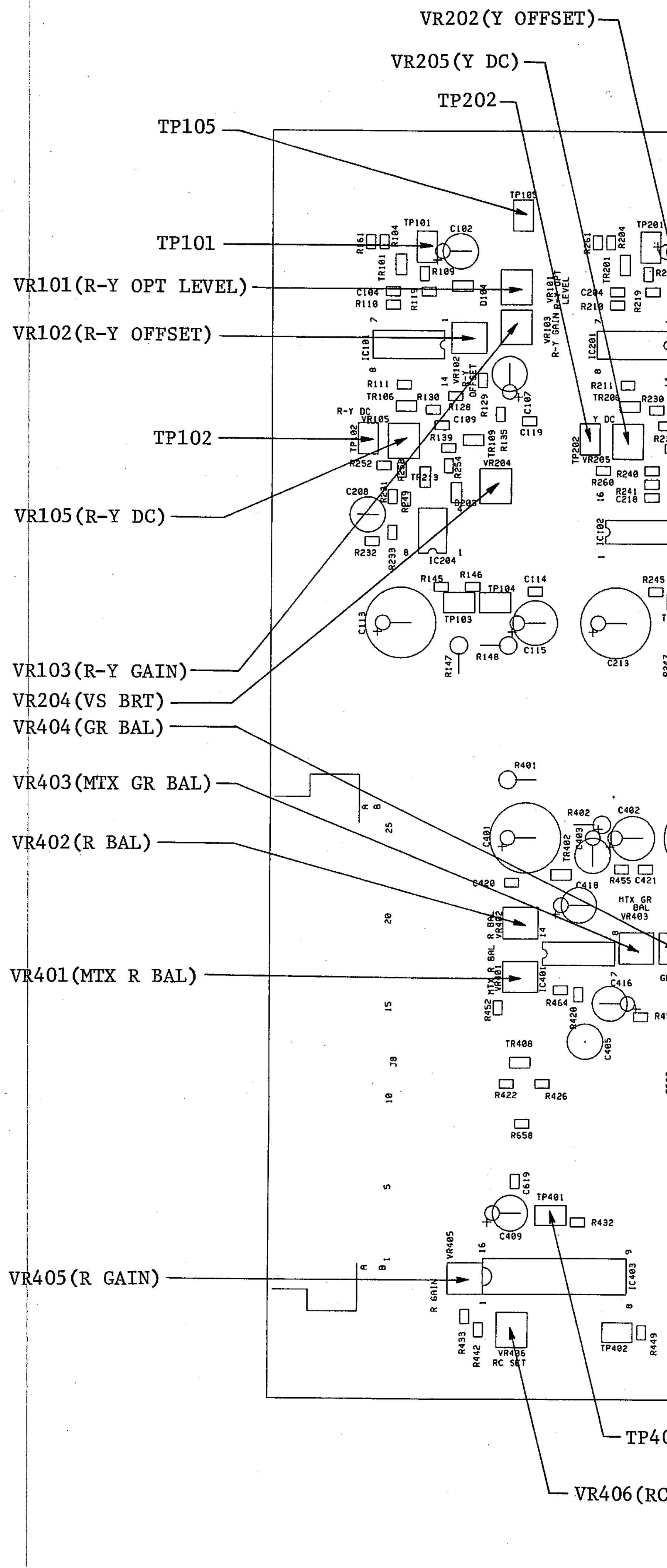




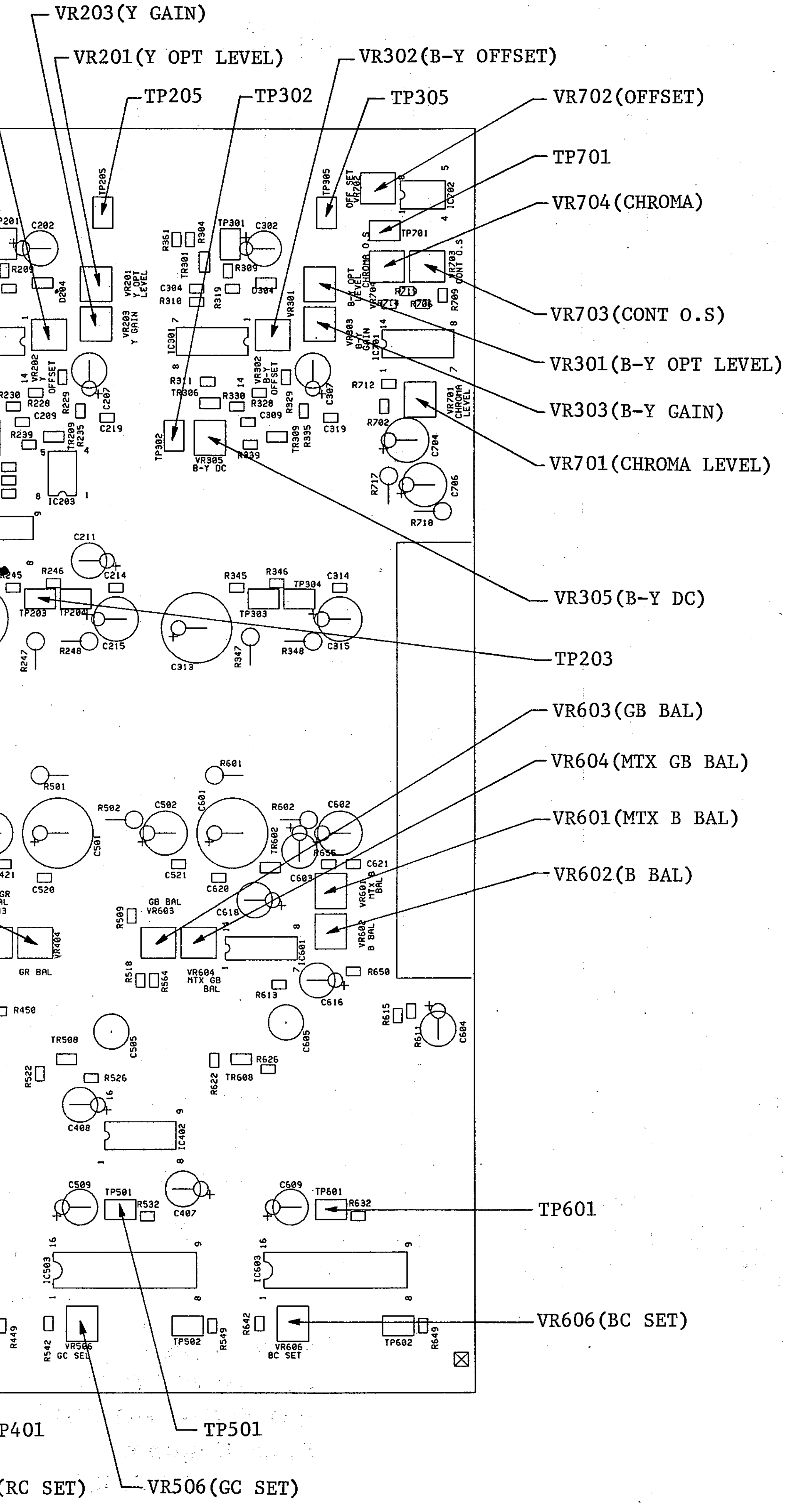
20/30 SERIES COLOR MONITOR VIDEO OUT BOARD

Block Diagram

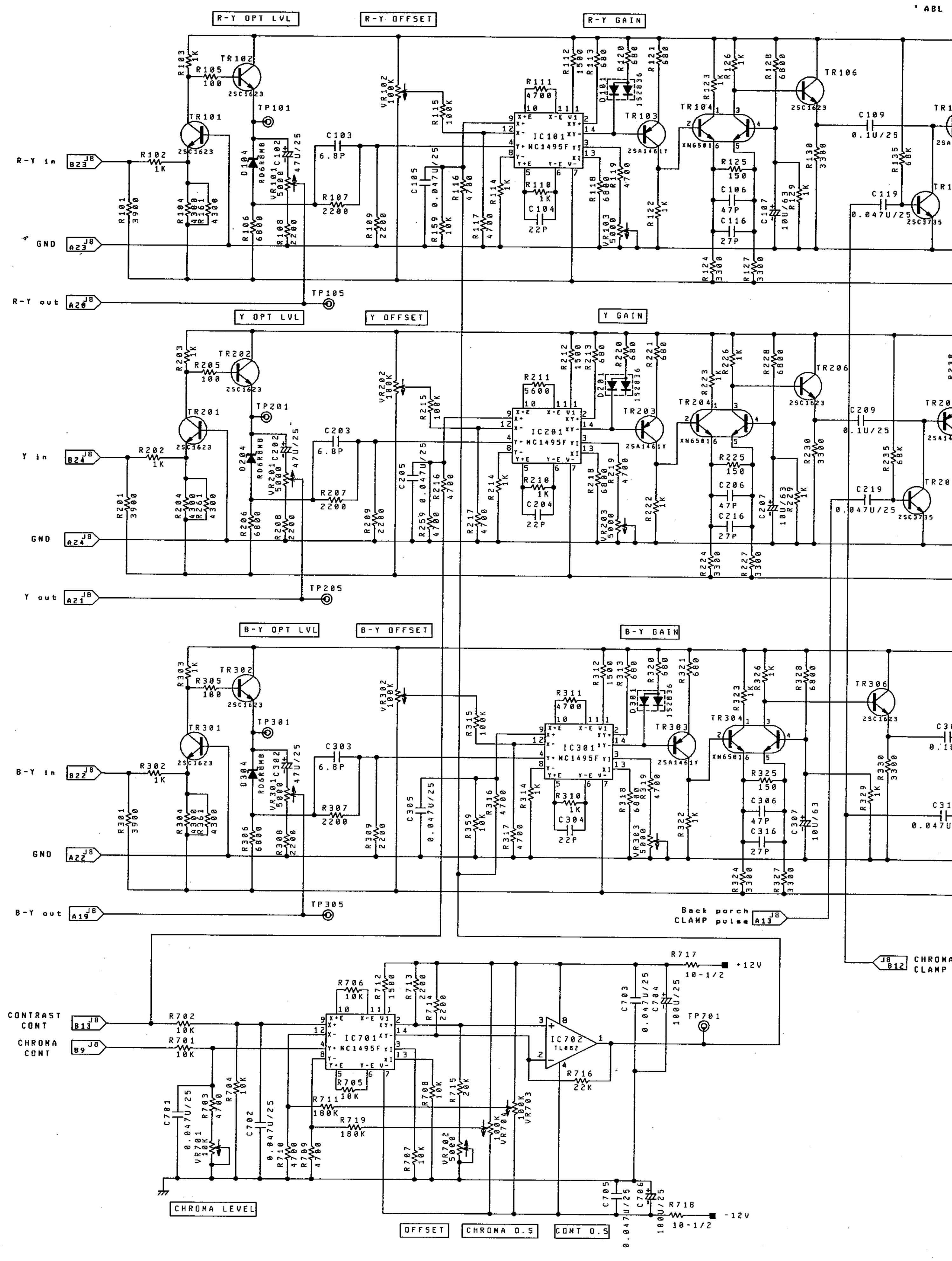
C2-904328



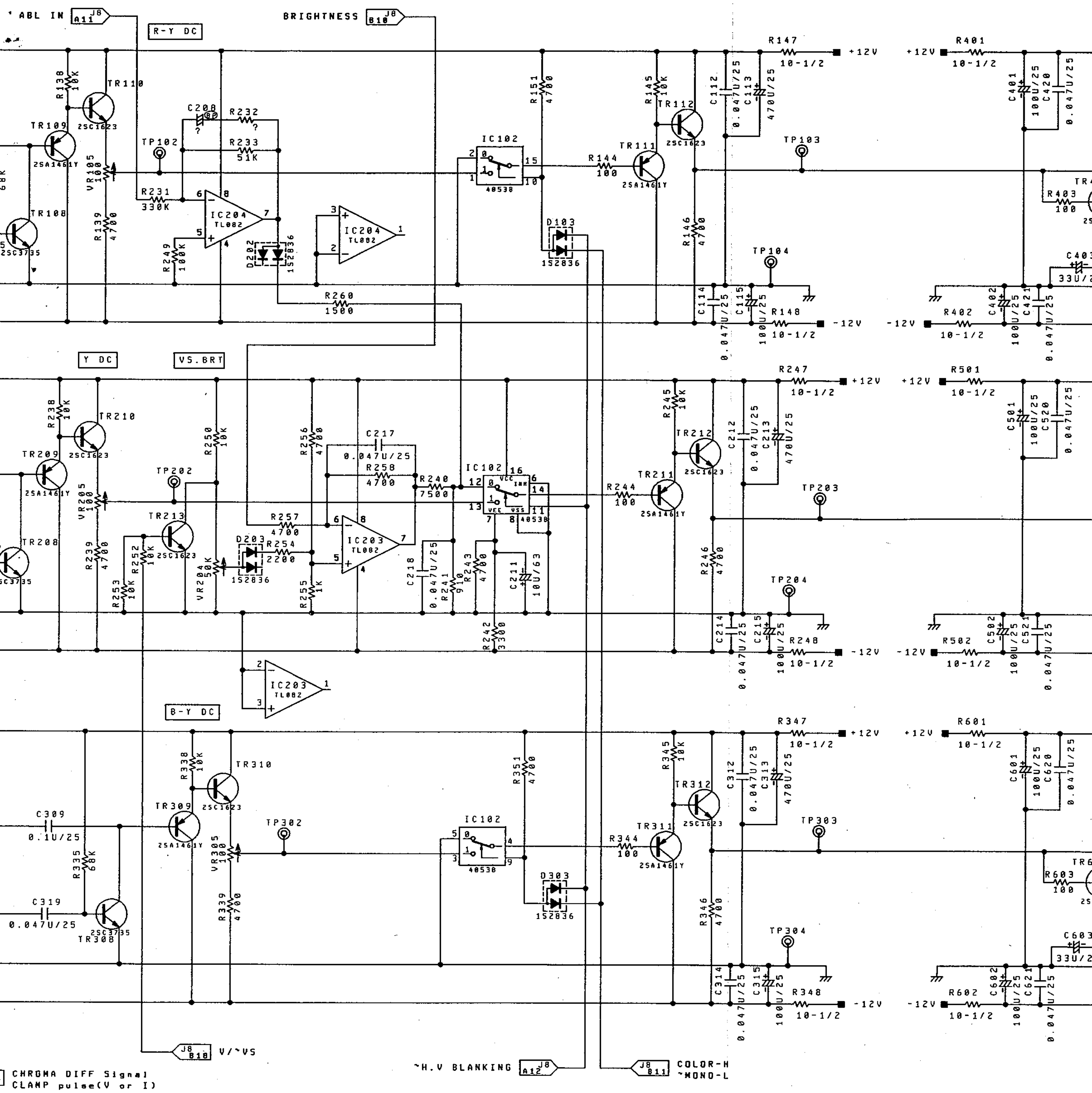
20/30 SERIES
VIDEO OUT BOARD
PARTS LOCATION
PC-2228

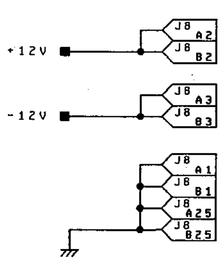


VR203(Y GAIN)
VR201(Y OPT LEVEL)
VR302(B-Y OFFSET)
TP205
TP302
TP305
VR702(OFFSET)
TP701
VR704(CHROMA)
VR703(CONT O.S)
VR301(B-Y OPT LEVEL)
VR303(B-Y GAIN)
VR701(CHROMA LEVEL)
VR305(B-Y DC)
TP203
VR603(GB BAL)
VR604(MTX GB BAL)
VR601(MTX B BAL)
VR602(B BAL)
TP601
VR606(BC SET)
P401
TP501
(RC SET)
VR506(GC SET)



ABL
R-Y OPT LVL
R-Y OFFSET
R-Y GAIN
R-Y in
B23 J8
GND
A23 J8
R-Y out
A20 J8
TP101
TP105
TR101
TR102
TR103
TR104
TR106
IC101 MC1495F
VR101 5000
VR102 100K
VR103 5000
D101 1S2836
D104 RD6R8HB
C103 6.8P
C105 0.047U/25
C109 0.1U/25
C119 0.047U/25
C107 10U/63
C102 47U/25
Y OPT LVL
Y OFFSET
Y GAIN
Y in
B24 J8
GND
A24 J8
Y out
A21 J8
TP201
TP205
TR201
TR202
TR203
TR204
TR206
IC201 MC1495F
VR201 5000
VR202 100K
VR203 5000
D201 1S2836
D204 RD6R8HB
C203 6.8P
C205 0.047U/25
C209 0.1U/25
C219 0.047U/25
C207 10U/63
C202 47U/25
B-Y OPT LVL
B-Y OFFSET
B-Y GAIN
B-Y in
B22 J8
GND
A22 J8
B-Y out
A19 J8
TP301
TP305
TR301
TR302
TR303
TR304
TR306
IC301 MC1495F
VR301 5000
VR302 100K
VR303 5000
D301 1S2836
D304 RD6R8HB
C303 6.8P
C305 0.047U/25
C307 10U/63
C302 47U/25
Back porch
CLAMP pulse
A13 J8
CHROMA
CLAMP
J8 B12
CONTRAST
CONT
B13 J8
CHROMA
CONT
B9 J8
R702 10K
R701 10K
IC701 MC1495F
IC702 TL082
R716 22K
R717 10-1/2
+12V
R718 10-1/2
-12V
TP701
C703 0.047U/25
C704 100U/25
C705 0.047U/25
C706 100U/25
VR701 10K
VR702 5000
VR703 100K
VR704 100K
R711 180K
R719 180K
R706 10K
R705 10K
CHROMA LEVEL
OFFSET
CHROMA D.S
CONT D.S





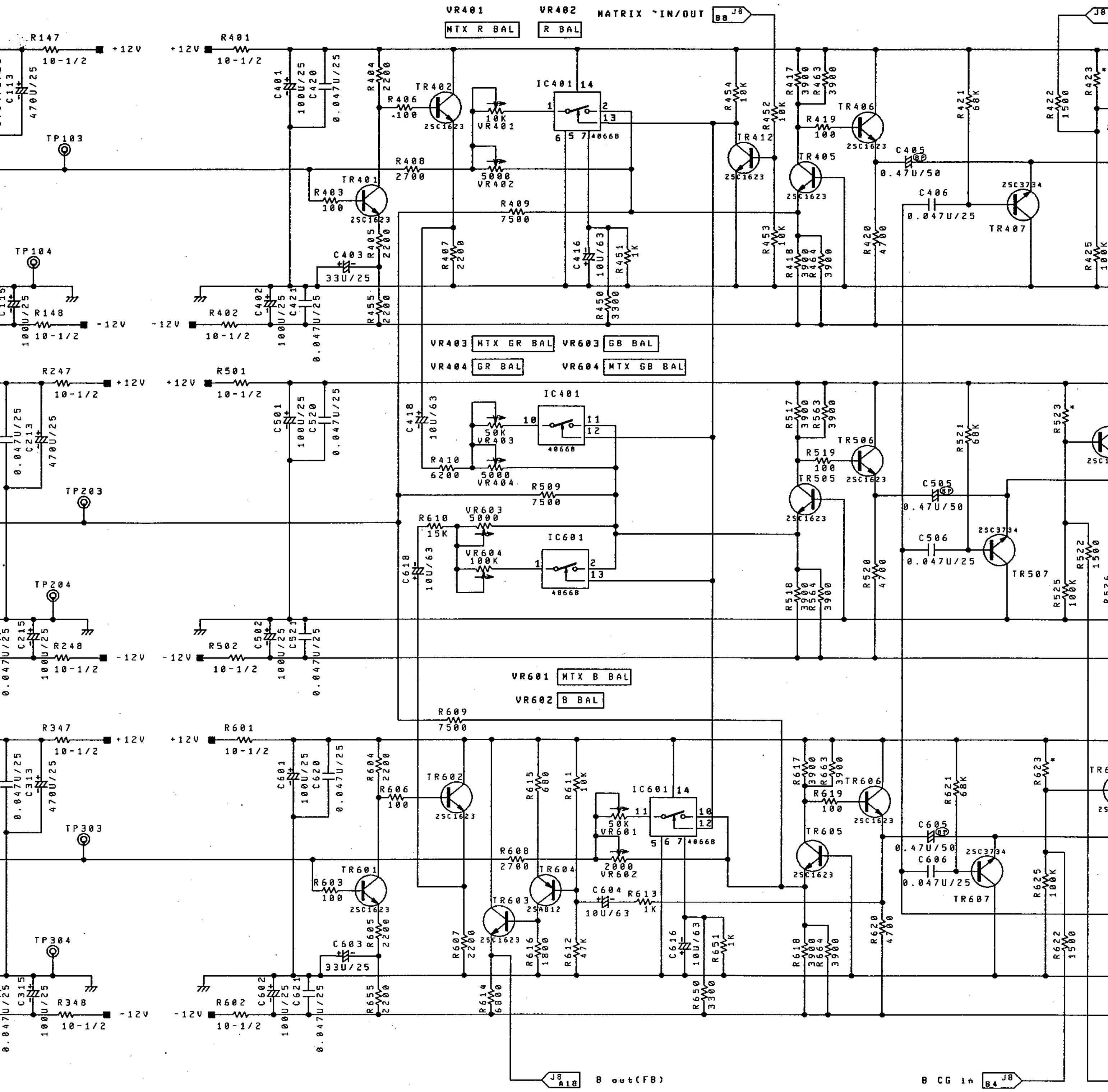
?	20SERIES	30SERIES
R232	330K	22K
C208	1U/50	10U/25

LAST NO.

IC	103	204	303	403	503	603	702
Tr	112	213	312	416	516	616	
VR	105	205	305	406	506	606	704
D	104	204	304	401	502	601	
R	161	261	361	464	564	664	719
C	119	219	319	421	521	621	706
TP	105	205	305	402	502	602	701

LOST NO.

IC	103,202,302,30
VR	104,304,501-50
Tr	105,107,205,20 403,404,413-41 501-504,512,51 612,613
R	131-134,136,13 150,152-158,16 234,236,237,25 331-334,336,33 350,352-358,36 411-416,424,44 503-508,510-51 533,544,550-55 624,627-630,63 656,657



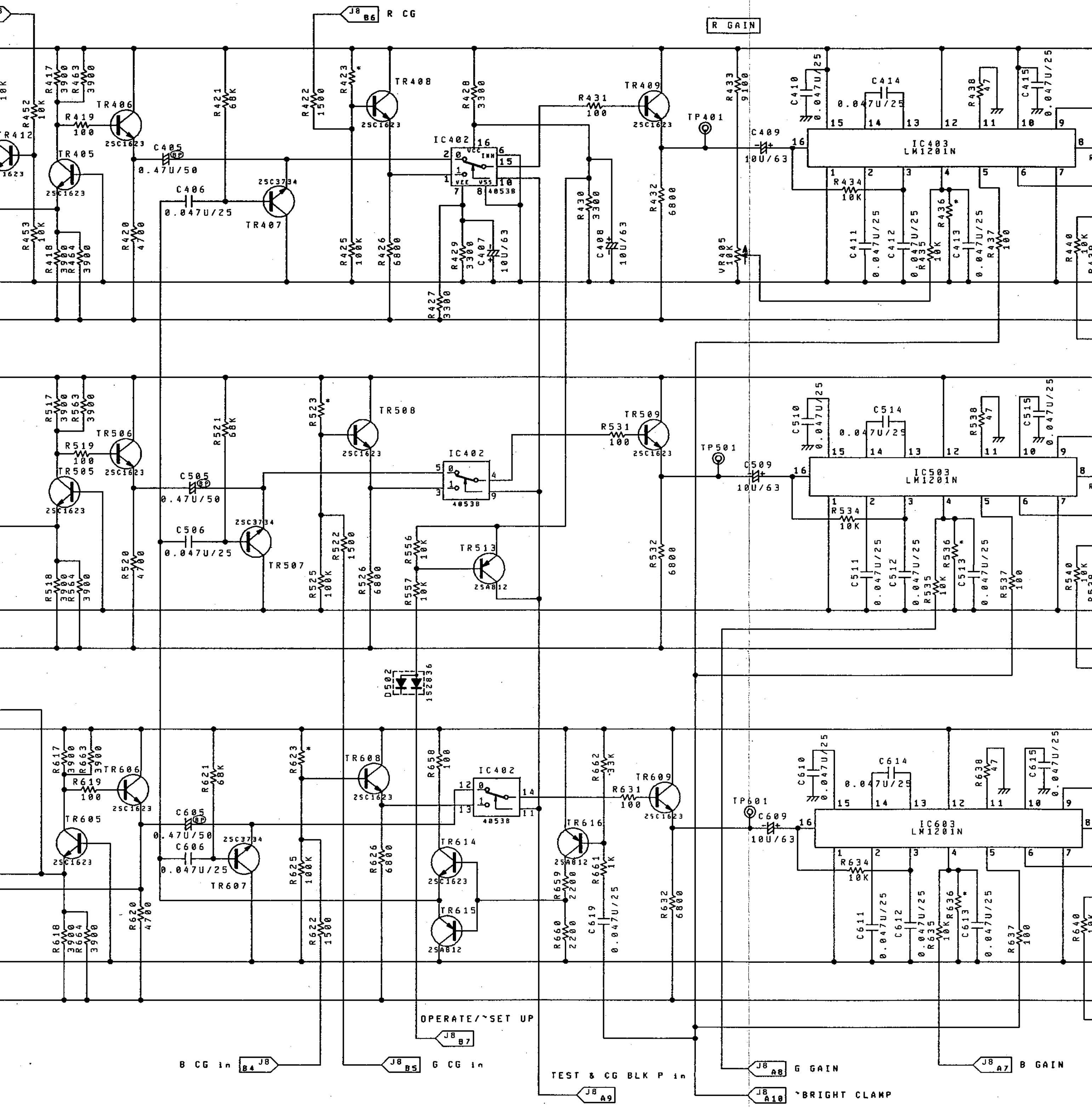
403	503	603	702
416	516	616	
406	506	606	704
401	502	601	
464	564	664	719
421	521	621	706
402	502	602	701

LOST NO.

IC	103,202,302,303,501,502,602
VR	104,304,501-505,605
Tr	105,107,205,207,305,307 403,404,413-416 501-504,512,514-516 612,613
R	131-134,136,137,140-143,149 150,152-158,160 234,236,237,251, 331-334,336,337,340-343,349 350,352-358,360 411-416,424,444,456-462 503-508,510-516,524,527-530 533,544,550-555,558-562 624,627-630,633,644,652-654 656,657
C	101,108,110,111,117,118, 201,210 301,308,310,311,317,318 404,417,419 503,504,507,508,516-519, 607,608,617
D	102,302

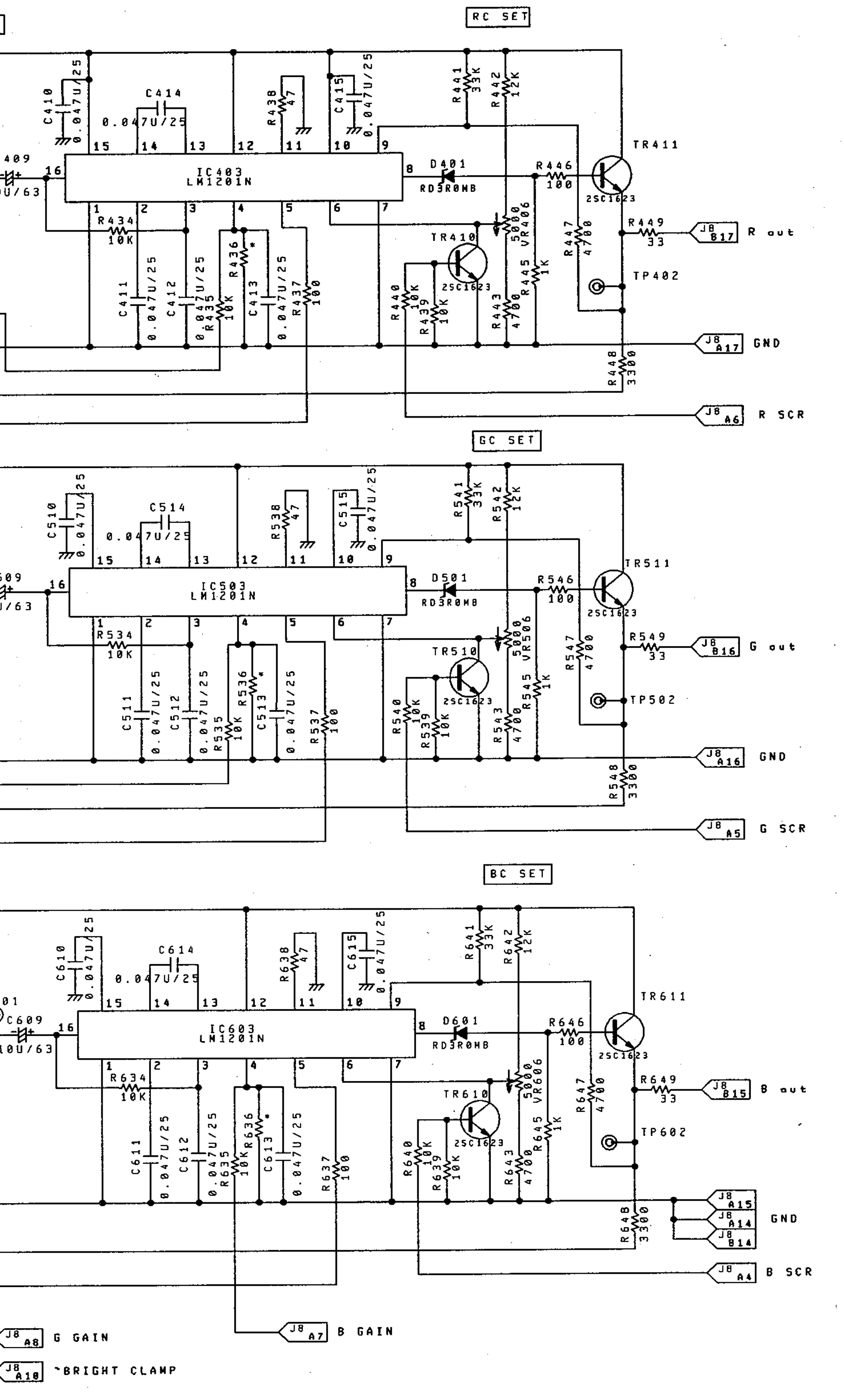
NOTE:

1. All resistors are in
F;1%), 1/10watt unles
2. All capacitors are in
otherwise specified.
3. All inductors are in
specified.
4. Waveforms are taken w
input.
5. Parts marked * are fa
6. Parts marked ★ are c
for X-radiation.



NOTE:

1. All resistors are in ohms 5%(parts marked F:1%), 1/10watt unless otherwise specified.
2. All capacitors are in farads, 300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.



20/30 SERIES
COLOR MONITOR
VIDEO OUT BOARD
Schematic Diagram
C11-904379

0-4. RGB OUT BOARD

(1) Outline

The R, G, and B signals supplied from the VIDEO OUT BOARD pass through the beam feedback clamp circuit, are amplified by the output amplifier circuit, and are applied to the cathode of the CRT.

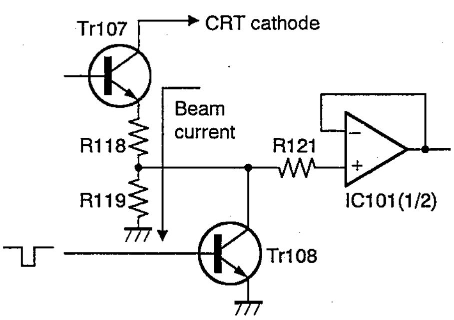
(2) Circuit Description

(a) Beam feedback circuit

Since each channel R, G and B has the same circuit, the circuit description given in this paragraph is of the R channel alone.

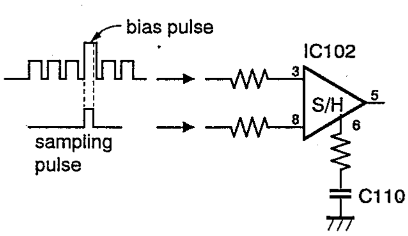
When the clamp pulse is "**L**", Tr108 is turned off. At this time, the bias pulse inputted to G1 of CRT flows from the cathode of CRT to R118 and R119 as a beam current.

This current is detected as a voltage at R119.



The voltage detected at R119 is inputted to the sample & hold IC (IC102) after passing through the voltage follower of IC101 (1/2).

Only the voltage of the bias pulse section is sampled at IC102, held at C110 and outputted to IC102-⑤ pin.



The DC voltage outputted from IC102-⑤ pin is controlled for the background DC voltage as a reference voltage at IC101 and outputted to IC101-⑦ pin. The DC voltage is fed back as a clamp voltage.

(3) Adjustment Procedure

Apply a sweep signal to the composite video input terminal.

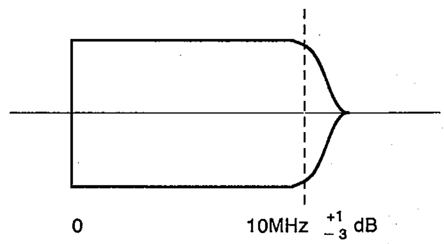
(a) VC101(R.FRQ) VC201(G.FRQ) VC301(B.FRQ)
VR101(R.FRQ) VR201(G.FRQ) VR301(B.FRQ)

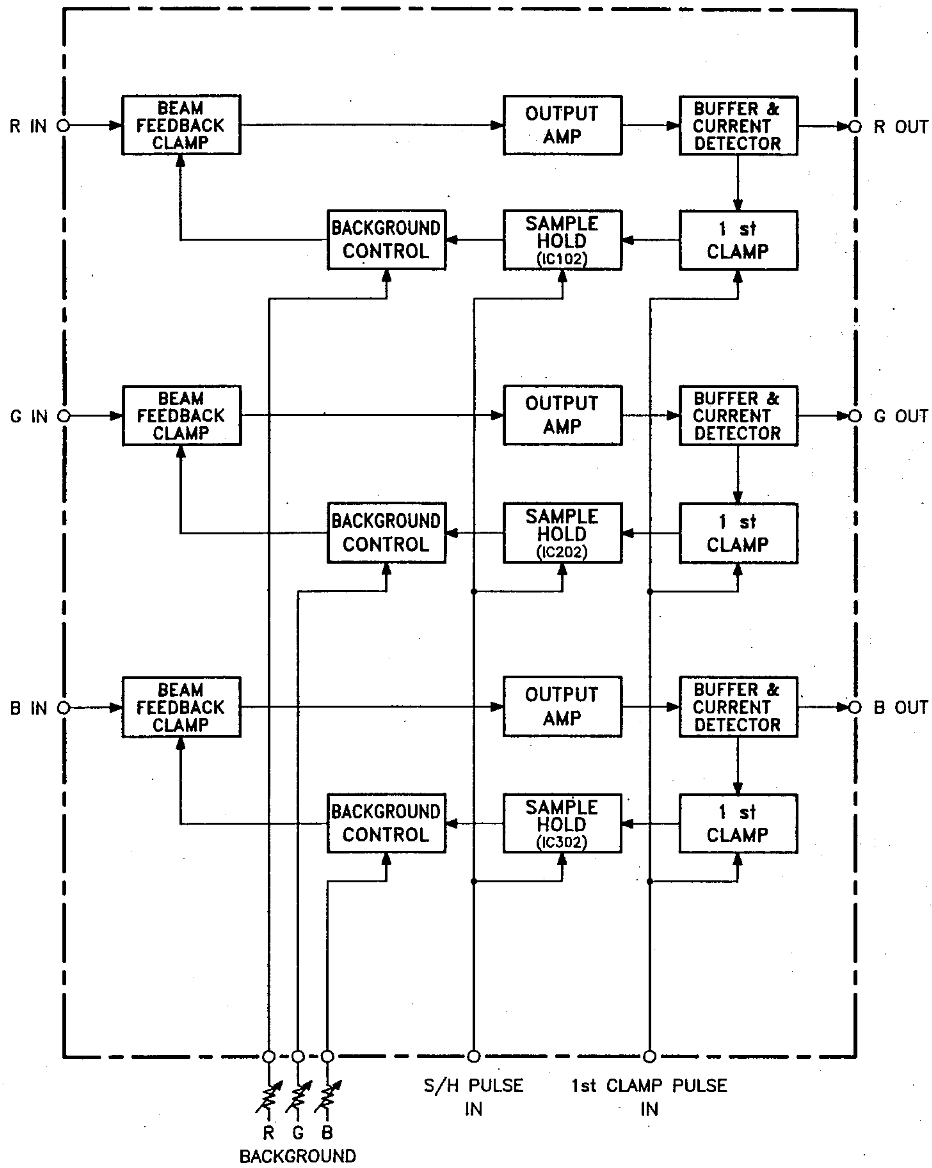
① Connect a 100:1 probe to TP101.

② Adjust VC101 and VR101 so that the 10MHz level is within +1dB to − 3dB of the 100kHz level.

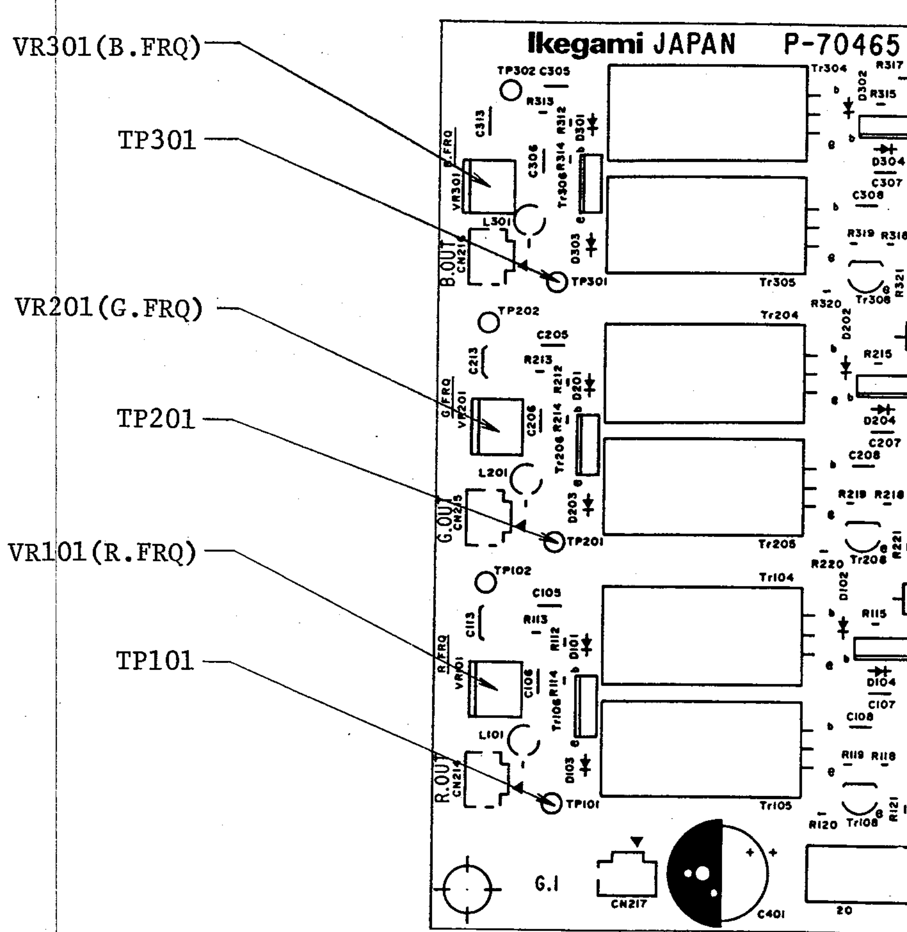
③ Adjust VC201 and VR201 at TP201 in the same manner.

④ Adjust VC301 and VR301 at TP301 in the same manner.

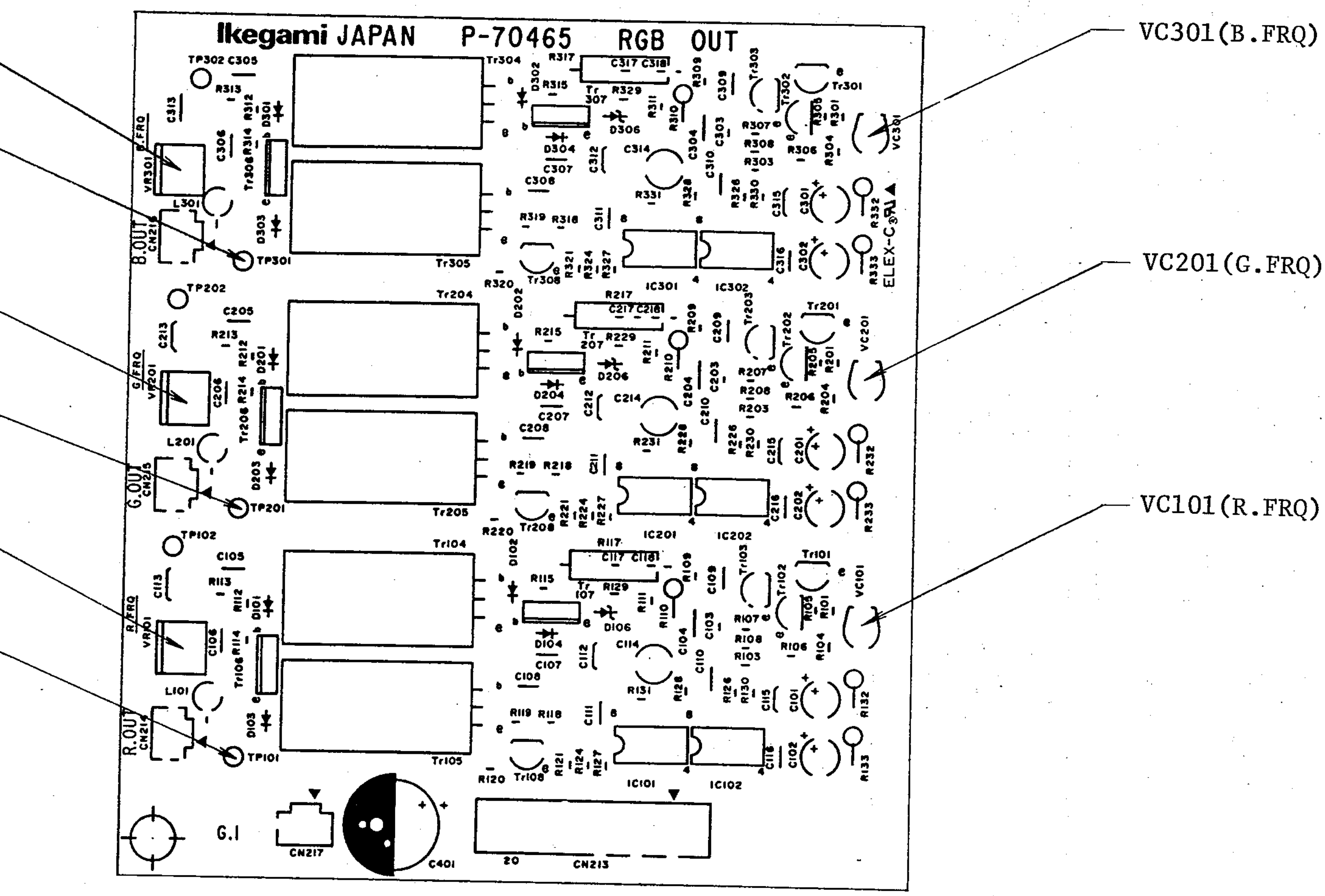




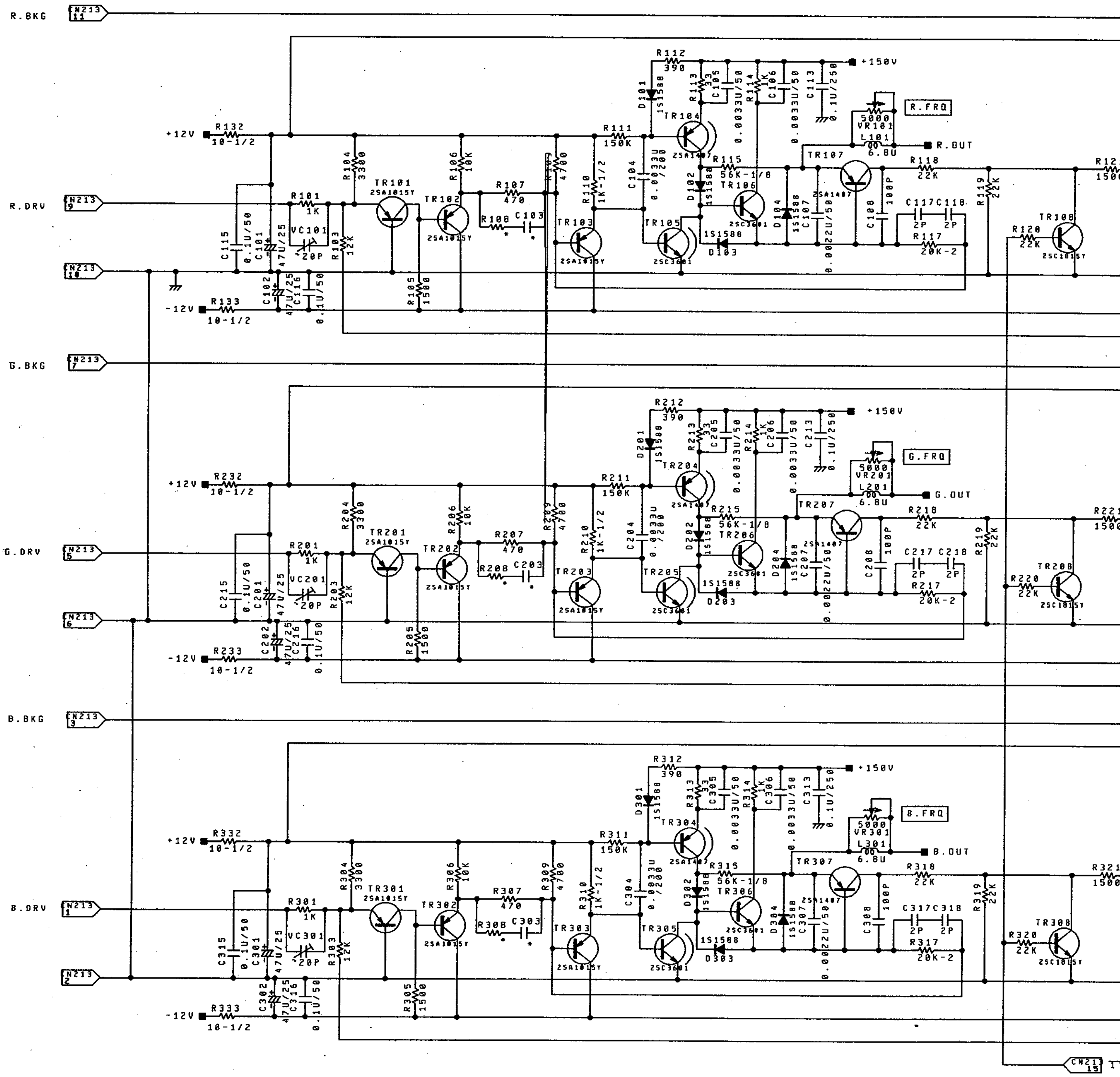
20/30 SERIES
COLOR MONITOR
RGB OUT BOARD
Block Diagram
C4-904323



20/30 SERIES
RGB OUT BOARD
PARTS LOCATION
P-70465

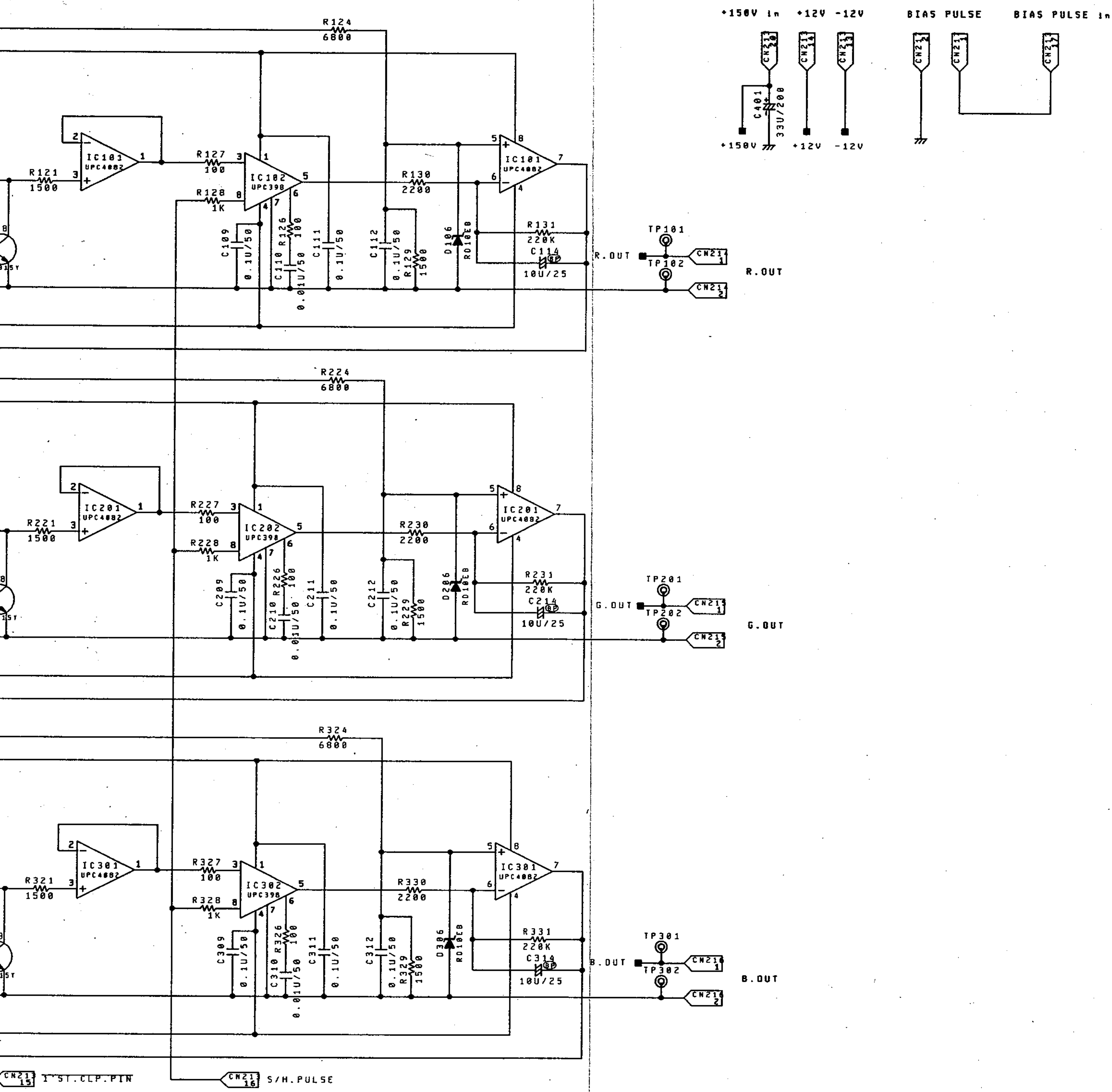


Ikegami JAPAN P-70465 RGB OUT
VC301(B.FRQ)
VC201(G.FRQ)
VC101(R.FRQ)
B.OUT
G.OUT
R.OUT
TP301
TP201
TP101
VR301
VR201
VR101
IC301
IC302
IC201
IC202
IC101
IC102
CN217
C401
CN213
G.I



NOTE:

1. All resistors are in ohms 5%(parts marked F:1%), 1/10watt unless otherwise specified.
2. All capacitors are in farads.300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

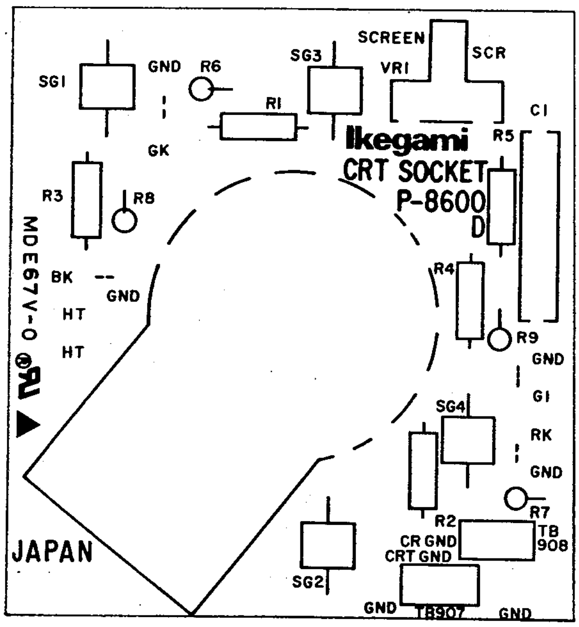


LAST NO.				
IC	102	202	302	
L	101	201	301	
R	133	233	333	
Tr	109	209	309	
C	118	218	318	401
D	106	206	306	
VC	101	201	301	
TP	102	202	302	

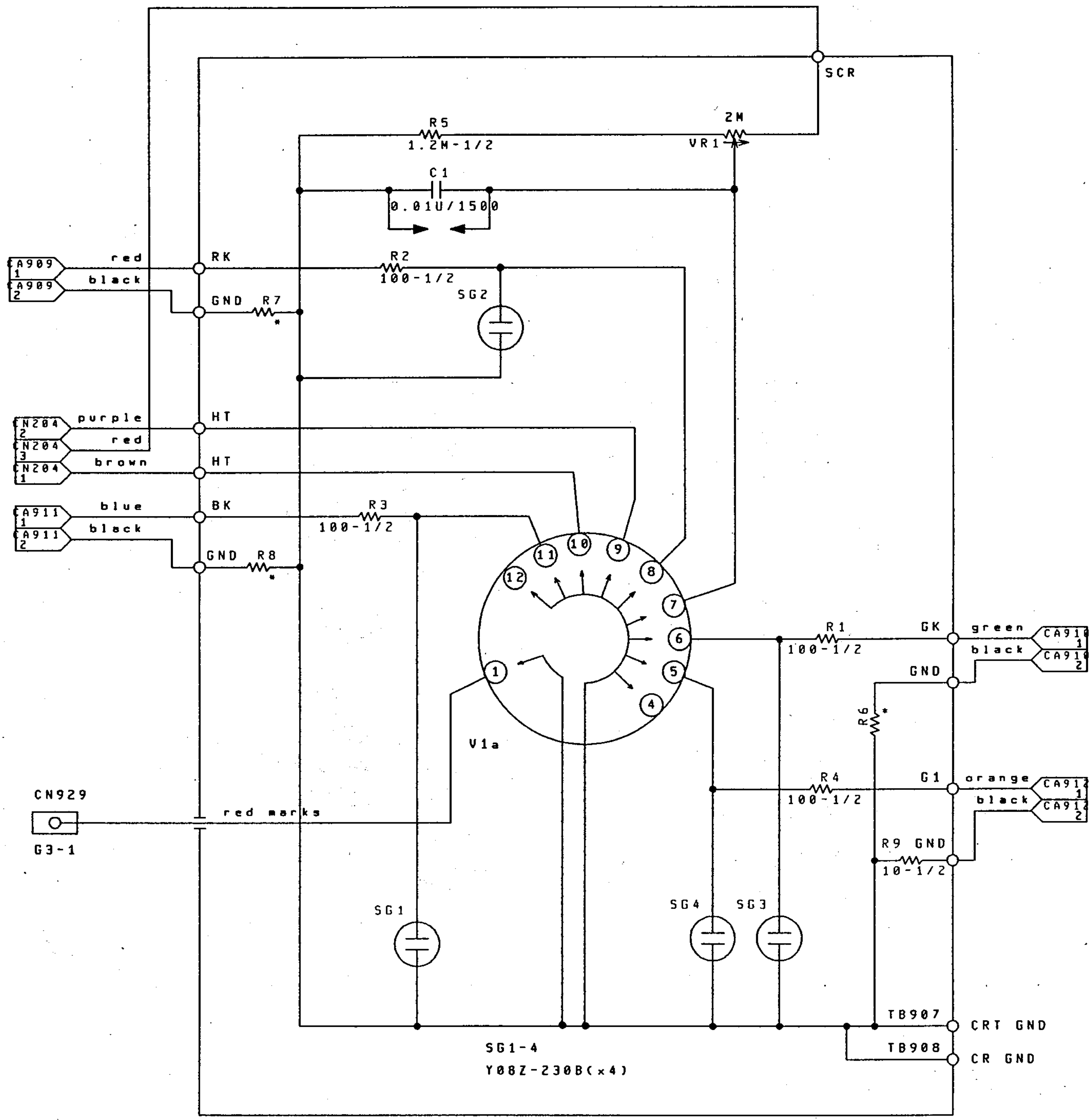
LOST NO.	
Tr	109,209,309
D	105,205,305
R	102,202,302
	116,216,316
	122,222,322
	123,223,323
	125,225,325

20/30 SERIES
COLOR MONITOR
RGB OUT BOARD
Schematic Diagram
C21-904183C

2-8. CRT SOCKET BOARD

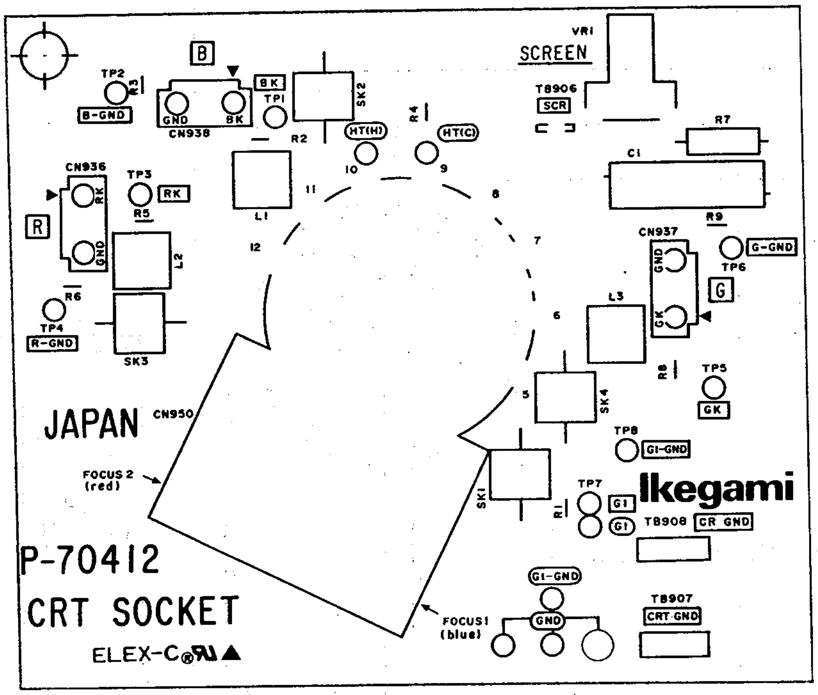


20 SERIES
CRT SOCKET BOARD
PARTS LOCATION
P-8600D

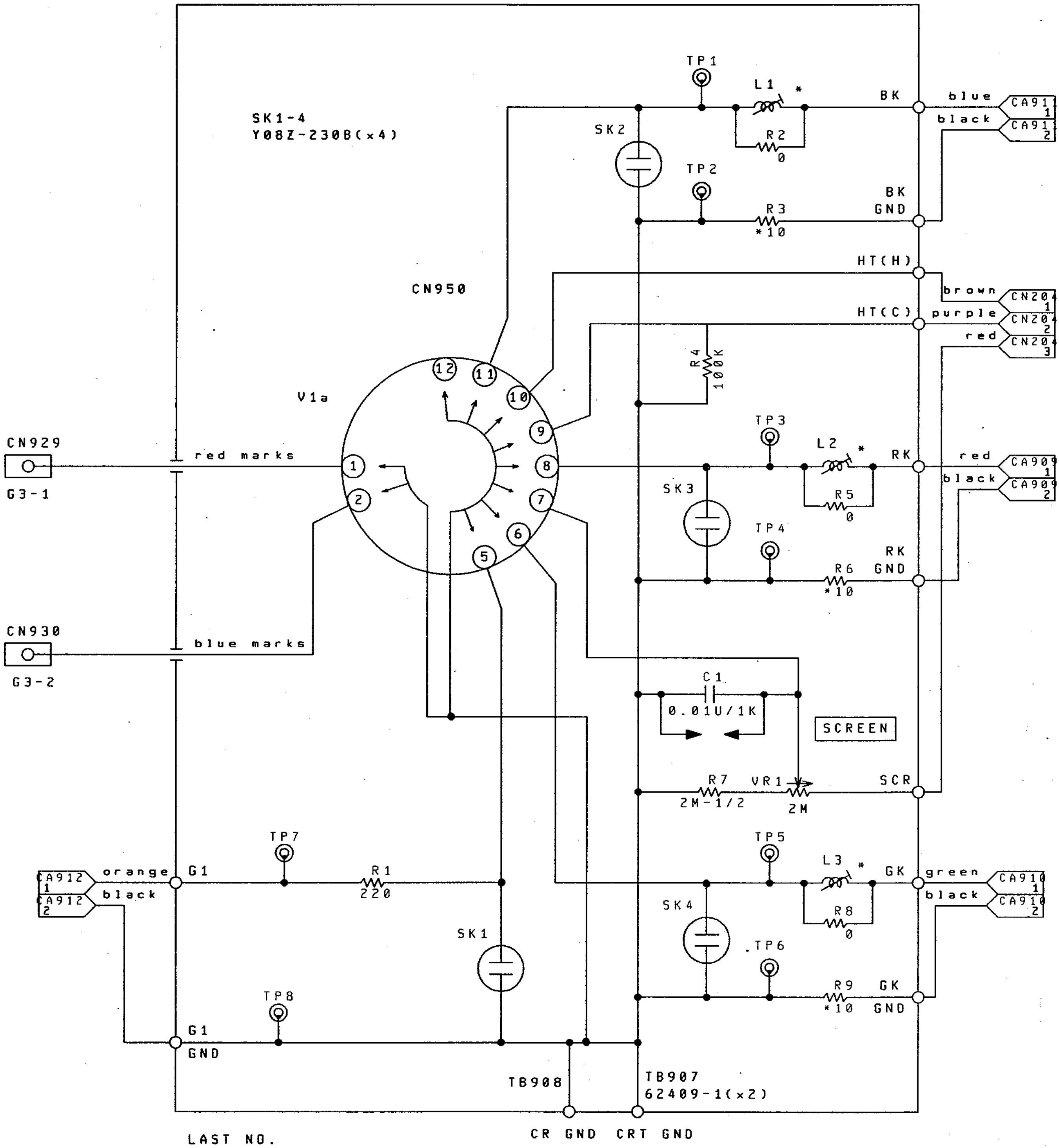


NOTE: 1. All resistors are in ohms 5%(parts marked F:1%), 1/4watt unless otherwise specified.
2. All capacitors are in farads, 300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

20 SERIES
COLOR MONITOR
CRT SOCKET BOARD
Schematic Diagram
C4-902693B



30 SERIES
CRT SOCKET BOARD
PARTS LOCATION
P-70412



LAST NO.

L3	C1
SK4	VR1
R9	TP8

NOTE:
1. All resistors are in ohms 5%(parts marked F;1%), 1/4watt unless otherwise specified.
2. All capacitors are in farads,300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

30 SERIES
COLOR MONITOR
CRT SOCKET BOARD
Schematic Diagram
C4-904123

1. DEF & POWER PROCESS

1-1. DEF BOARD & FBT BOARD /HV UNIT

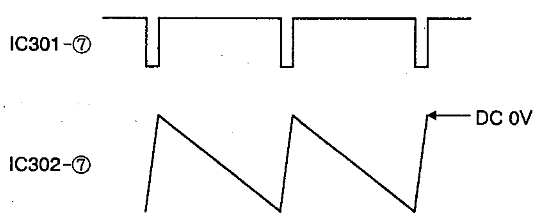
(1) Outline

Horizontal and vertical deflection are performed on the basis of the HD and VD supplied from the MOTHER BOARD. It also generates and controls the high voltage, etc., supplied to the CRT.

(2) Circuit Description

(a) Vertical deflection circuit

The IC105 functions as an unstable multivibrator and drives the Tr301 by using the pulse synchronizing with the VD supplied from the INTERFACE BOARD. The saw-tooth wave-form is produced with Tr302 and C305 by shaping the pulse waveform at IC301. The level of this saw-tooth wave changes according to the DC voltage of the IC302-③ and this level determines the height of the screen. The wave of the IC302-⑦ as it is deflects only below the GND. This means that a picture appears only on the lower half portion of the screen. In order to avoid this, a DC bias is applied to the ⑤ and ⑥ pins of the IC303 so that the middle point of the saw-tooth wave may be 0V



(b) Horizontal deflection circuit

The main component of the horizontal deflection drive circuit is the IC105.
This circuit mainly consists of the circuits having the following four functions.

① The phase of the horizontal deflection pulse is changed by the IC102 monostable multivibrator to control the H. phase.

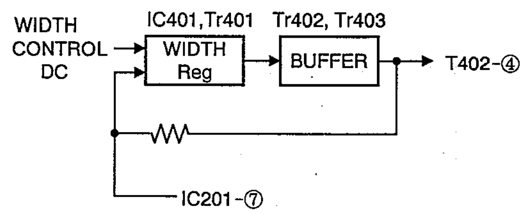
② The phase of the AFC pulse of ① and that of the HD of the IC105-⑮ are compared to control the oscillating frequency.(AFC circuit)

③ The deflection drive pulse is shut off upon receipt of DC from the protection circuit.

④ It switches the AFC time constant together with the time constant switching IC(IC104).

The IC105 consists of four circuits mainly.

The IC105 oscillating circuit is actuated at 15.75KHz and its drive pulse is applied to the Tr404 of the horizontal drive circuit via the Tr103 and Tr104 buffers.
The current is amplified in Tr404 and T401 of the horizontal circuit to drive the Tr405.
The power supply to the horizontal deflection circuit is applied to the T402-④ pin.
The regulator composed of IC401, Tr401, Tr402 and Tr403 compares the supply voltage with the DC voltage of the WIDTH CONTROL and stabilizes it.
A parabolic waveform is applied from the IC201-⑦ pin to correct the side pin.



(c) High voltage output circuit

Like the horizontal output circuit, the high voltage output circuit applies the drive pulses transmitted from the Tr103 and Tr104 buffers to the Tr409 and drives the Tr410 via the Tr429 and Tr430 buffers to generate a high voltage by the flyback method.
The series regulator composed of Tr421, Tr422, Tr423, Tr424, Tr425 and Tr432 controls the power supplied to the No.1 pin of the flyback transformer to stabilize the high voltage output.

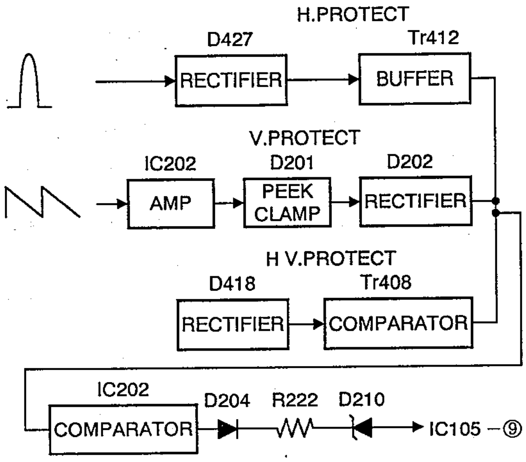
(d) Protection circuit

When any of the following states occurs due to the trouble of the deflection circuits or high voltage circuit, the protection circuit functions to shut down the high voltage output by increasing the DC voltage of the IC105-⑨ pin.

① When the high voltage output is excessively increased and the flyback pulse level becomes higher than the setting.

② When no current comes to flow to the T403-③ and-④ pins connected to the cold side of the horizontal deflection yoke and no pulse wave-form is generated between the T403-① and ②.

③ When the saw-tooth wave disappears from the cold side of the vertical deflection yoke or the DC bias is excessively shifted.



(e) ***Horizontal centering circuit***

The deflecting position can be adjusted by flowing a DC current to the hot side of the horizontal deflection yoke through the L402. This control is accomplished by inputting the DC for H.CENT control to IC402.

The Tr414 and Tr415 serve as buffers for the IC402.

(f) ***Rotation adjusting circuit***

This circuit functions to control the DC current applied to the rotation coil to cancel the horizontal magnetic field which has influence on the monitor. The current which has flown into the rotation coil is applied to the R231. This circuit compares the voltage generated from such currents with the reference voltage and controls to flow a constant current.

(g) ***Dynamic focus circuit (30 Series only)***

HD is applied from the INTERFACE BOARD to the base of the Tr426 and the HD is integrated in the Tr426 and C443 to become a saw-tooth wave. The saw-tooth wave is integrated furthermore in the IC403, C445 and R482 to become a "H" parabolic waveform.

This parabolic waveform and the "V" parabolic waveform from the IC201- ⑦ are applied to the IC404② to superpose the "V" parabolic waveform onto the "H" parabolic waveform, thereby adjusting the dynamic focus. The VR404 functions to adjust the focus on the both sides and the VR406 functions to adjust the focus on the top and bottom.

(3) Adjustment Procedure

(a) ***VR101(H.HOLD)***

① Adjust VR101 so that there is horizontal sync on the screen.

(b) ***VR102(V.HOLD 6)***

① Apply a PAL signal to the input terminal.

② Adjust VR102 so that there is vertical sync on the screen.

(c) ***VR103(V.HOLD 5)***

① This adjustment is performed after adjusting VR102.

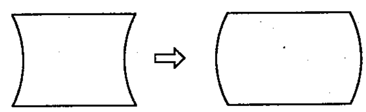
② Apply a NTSC signal to the input terminal.

③ Adjust VR103 so that there is vertical sync on the screen.

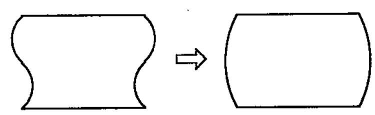
(d) ***VR201(PIN PHASE)***
VR202(SIDE PIN ADJ)
VR407(PIN AMP)

① Press the [TEST] switch to select the "CROSS HATCH" signal.

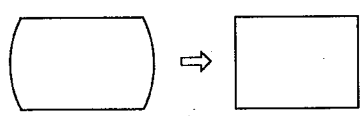
② Set VR407 to MAX.



③ Adjust VR201 so that the portion with maximum lateral protrusion comes into the center as shown in the figure below.



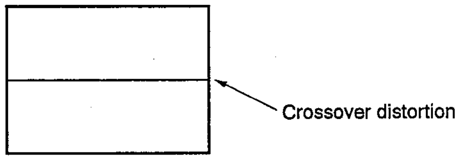
④ Adjust VR407 so that the vertical lines on the left and right of the screen are straight.



(e) VR301(V.BIAS)

① Press the [TEST] switch to select the "FLAT FIELD" signal.

② Eliminate crossover on the screen using VR301 only when Tr304 or Tr305 is replaced and crossover can be confirmed on the screen.



(f) VR302(625 HEIGHT)

① Apply a NTSC signal to the input terminal. Adjust the HEIGHT with the [HEIGHT] switch on the pull-out panel. (Refer to 5-3.(1) in the OPERATION MANUAL.)

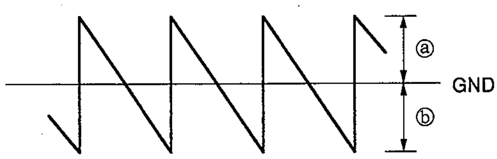
② Apply a PAL signal to the input terminal and adjust the height using VR302.

(g) VR303 (DC OS)

① Connect the probe to IC303-7.

② Set the V.CENT to 50% with the [V.CENT] switch on the pull-out panel.

③ Adjust VR303 so that the ratio of the levels of ⓐ and ⓑ in the figure below is 1:1 centered on GND. (ⓐ=ⓑ)



(h) VR304(V.LIN)

① Press the [TEST] switch to select the "CROSS HATCH" signal.

② Adjust VR304 so that the vertical linearity is optimum.

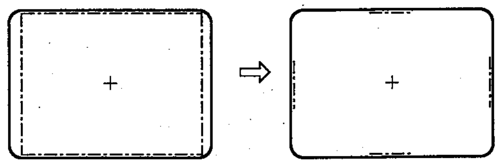
(i) VR401(WIDTH ADJ)

① Press the [SAFE TITLE] switch to select the "95%".

② Press the [SCAN] switch to select the "OVER SCAN".

③ Set the WIDTH to 90% with the [WIDTH] switch on the pull-out panel.

④ Adjust VR401 so that the 95% SAFE TITLE marker comes into the position of the escutcheon frame.



(j) VR402 (H.V PROTECT)
VR403 (HV ADJ)

① Connect a high-voltage meter to the anode of the CRT.

② Set the high-voltage to 27.5kV using VR403.

③ Set the [CONT] and [BRIGHT] switch to "MANUAL" state and set the CONT and BRIGHT to the position where the [OVER LOAD] LED on the front left begins to light up.

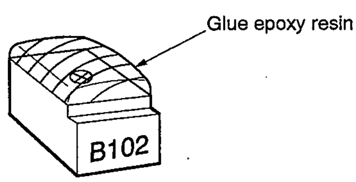
④ Use VR402 to set to the position where the protection begins to operate. Then set the [POWER] switch to "OFF" position.

⑤ Turn VR403 slightly counterclockwise and set the [POWER] switch to "ON" position.

⑥ Adjust VR403 so that the high-voltage is 25kV.

Precaution

These controls are not for field servicing and are fixed with glue after setting to avoid X-ray radiation which may cause one component failure in the circuit and misadjustment of these controls. The sealing method is shown in the diagram.



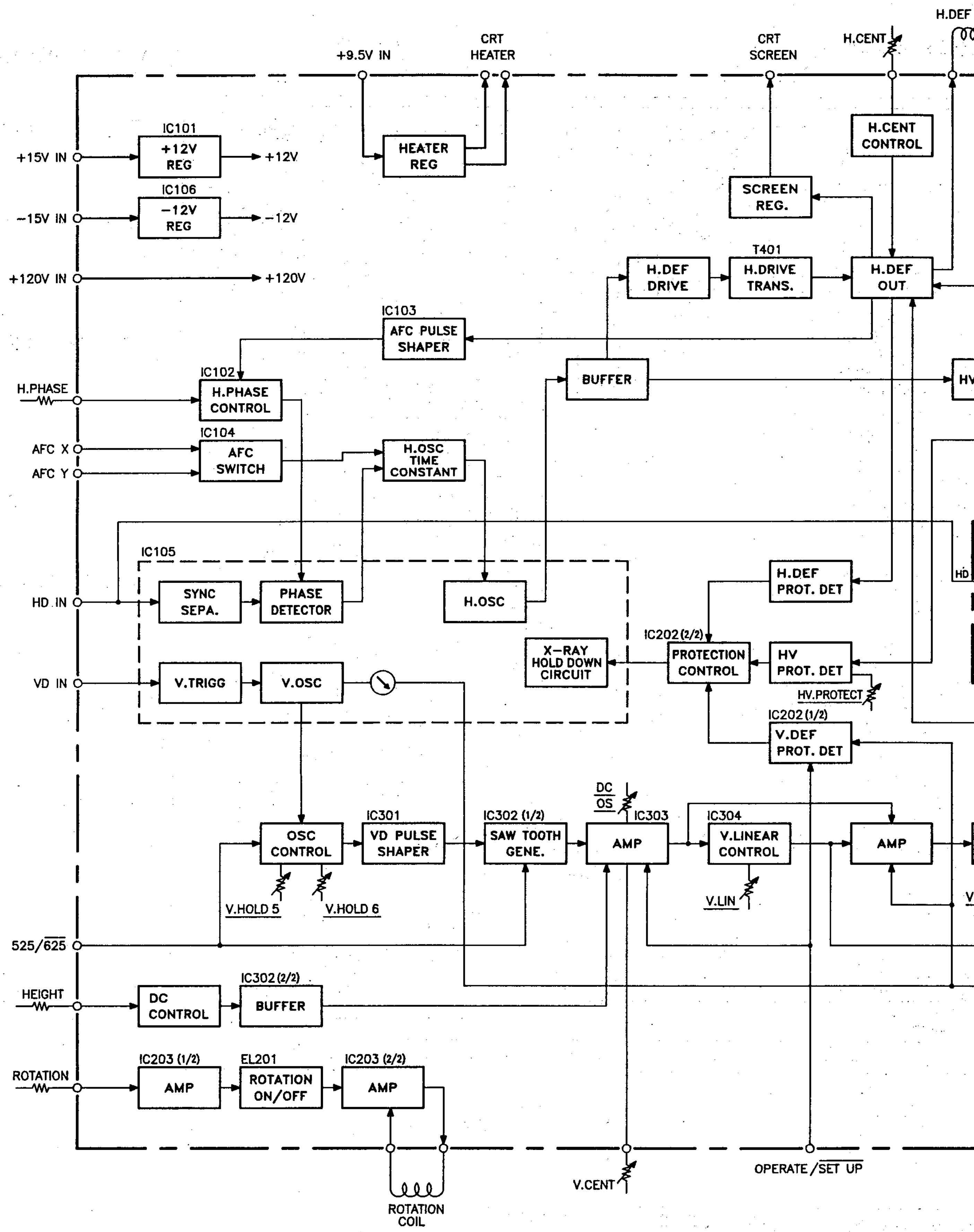
These adjustments are required when replacement of the parts marked with ★ , ⊛ in the schematic diagram of the DEF BOARD is done.

(k) ***VR404 (SIDE FOCUS)***
VR405(BIAS) } only 30 SERIES
VR406(T/B FOCUS)

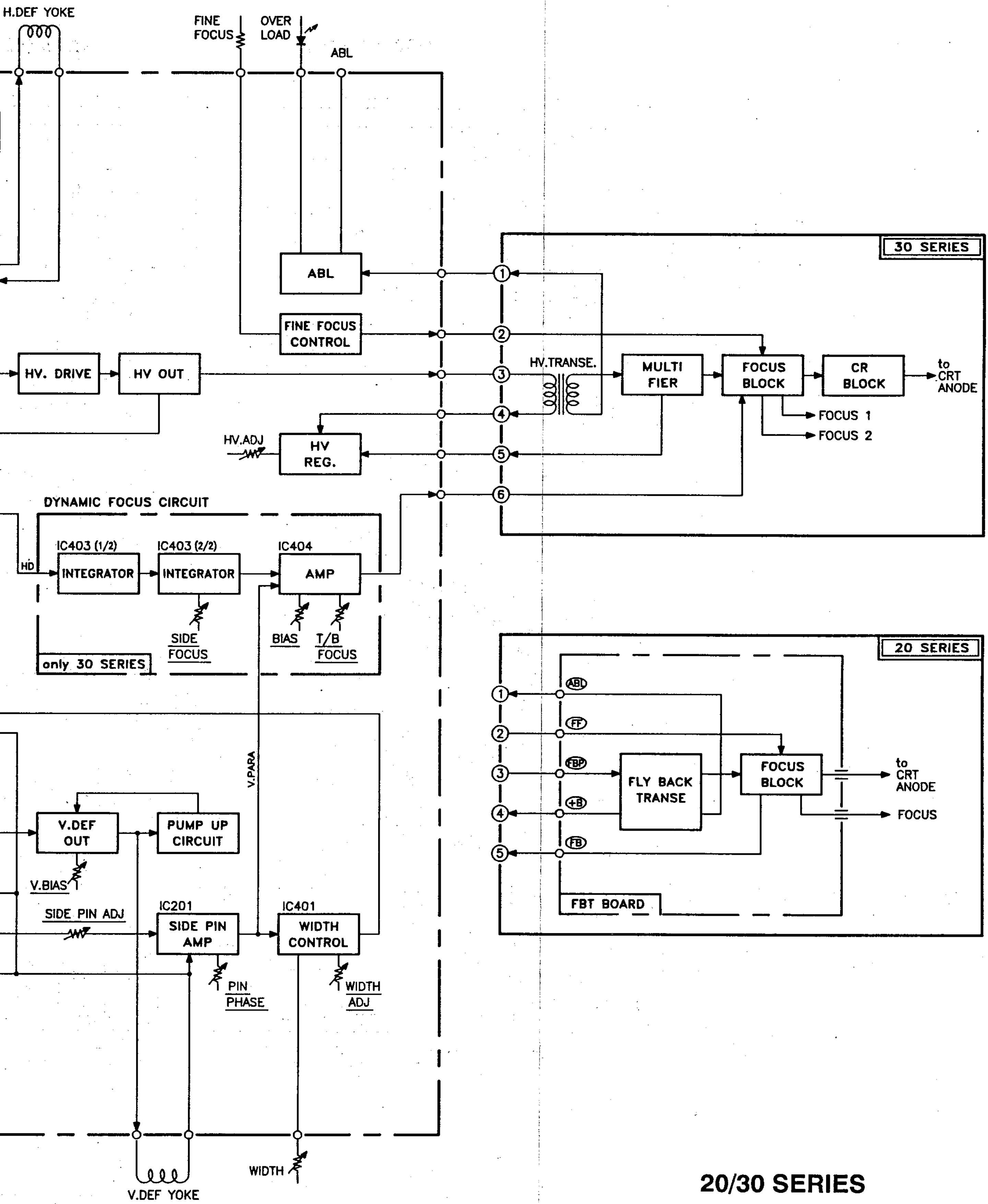
① Set the FINE FOCUS to 50% with the FINE FOCUS switch on the pull-out panel.

② Give the proper bias using VR405. Adjust VR404 and VR406 so that the focus of the left and right (VR404), and the upper and lower (VR406) is optimum.
At the same time, adjust the FOCUS 1 and FOCUS 2 described in the OPERATION MANUAL 7-2 (2).

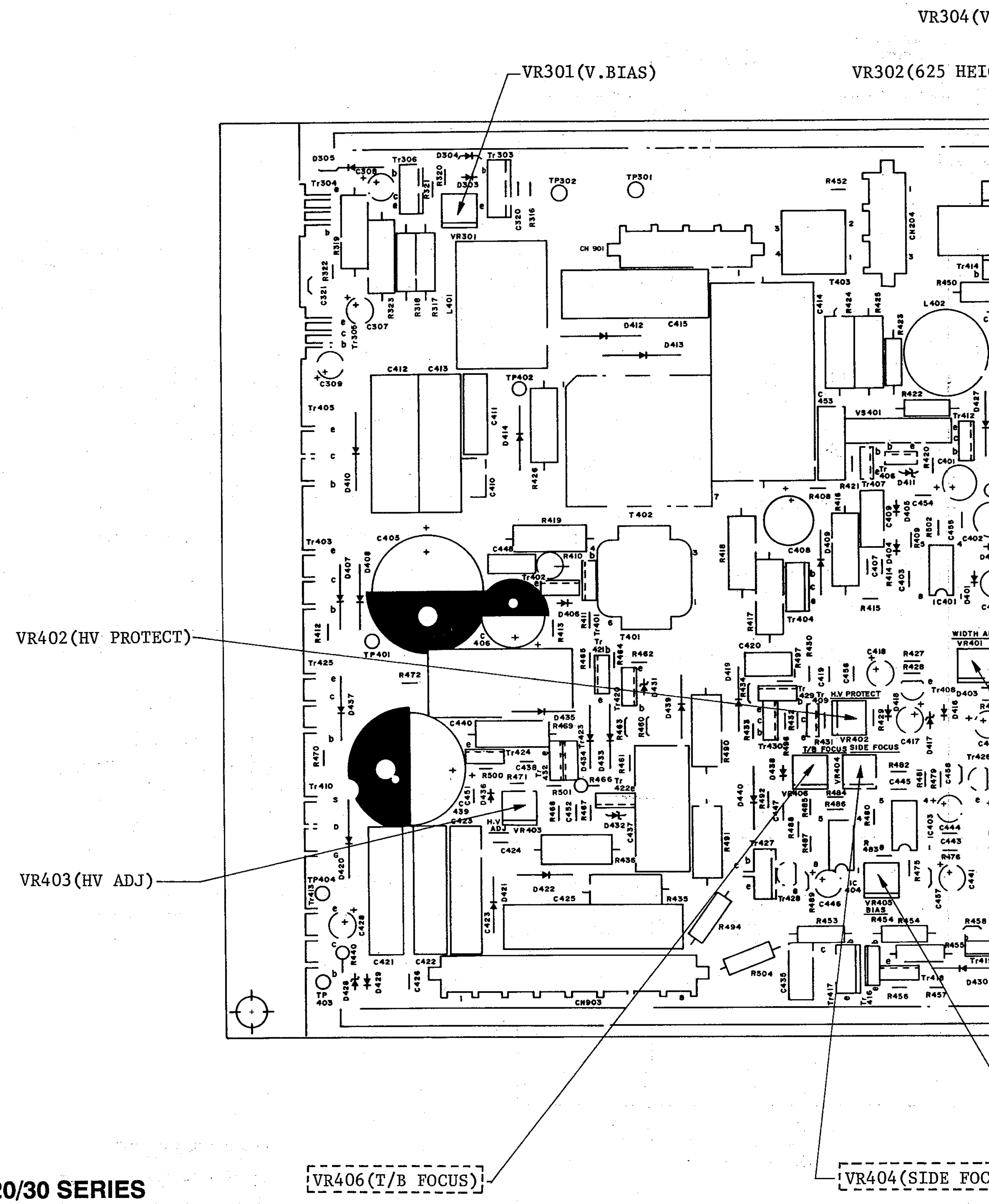
070



H.DEF
CRT HEATER
+9.5V IN
CRT SCREEN
H.CENT
IC101
+12V REG
+15V IN
+12V
HEATER REG
H.CENT CONTROL
IC106
−12V REG
−15V IN
−12V
SCREEN REG.
+120V IN
+120V
H.DEF DRIVE
T401
H.DRIVE TRANS.
H.DEF OUT
IC103
AFC PULSE SHAPER
IC102
H.PHASE
H.PHASE CONTROL
BUFFER
HV
IC104
AFC X
AFC Y
AFC SWITCH
H.OSC TIME CONSTANT
IC105
HD IN
SYNC SEPA.
PHASE DETECTOR
H.OSC
H.DEF PROT. DET
HD
IC202 (2/2)
X−RAY HOLD DOWN CIRCUIT
PROTECTION CONTROL
HV PROT. DET
VD IN
V.TRIGG
V.OSC
HV.PROTECT
IC202 (1/2)
V.DEF PROT. DET
DC OS
IC301
IC302 (1/2)
IC303
IC304
OSC CONTROL
VD PULSE SHAPER
SAW TOOTH GENE.
AMP
V.LINEAR CONTROL
AMP
V.HOLD 5
V.HOLD 6
V.LIN
V
525/625
HEIGHT
IC302 (2/2)
DC CONTROL
BUFFER
ROTATION
IC203 (1/2)
EL201
IC203 (2/2)
AMP
ROTATION ON/OFF
AMP
V.CENT
OPERATE/SET UP
ROTATION COIL

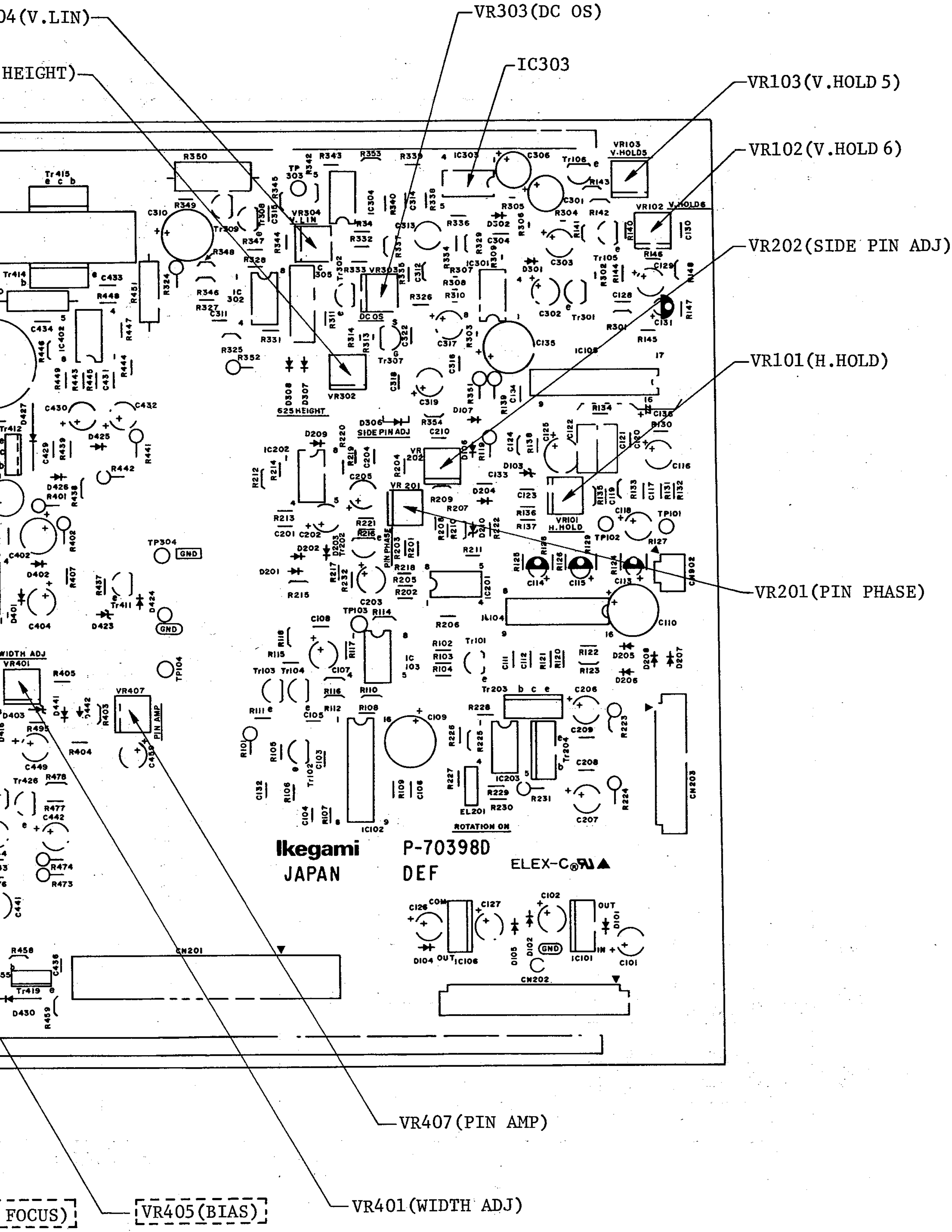


20/30 SERIES
COLOR MONITOR
DEF BOARD & HV UNIT
Block Diagram
C2-904339

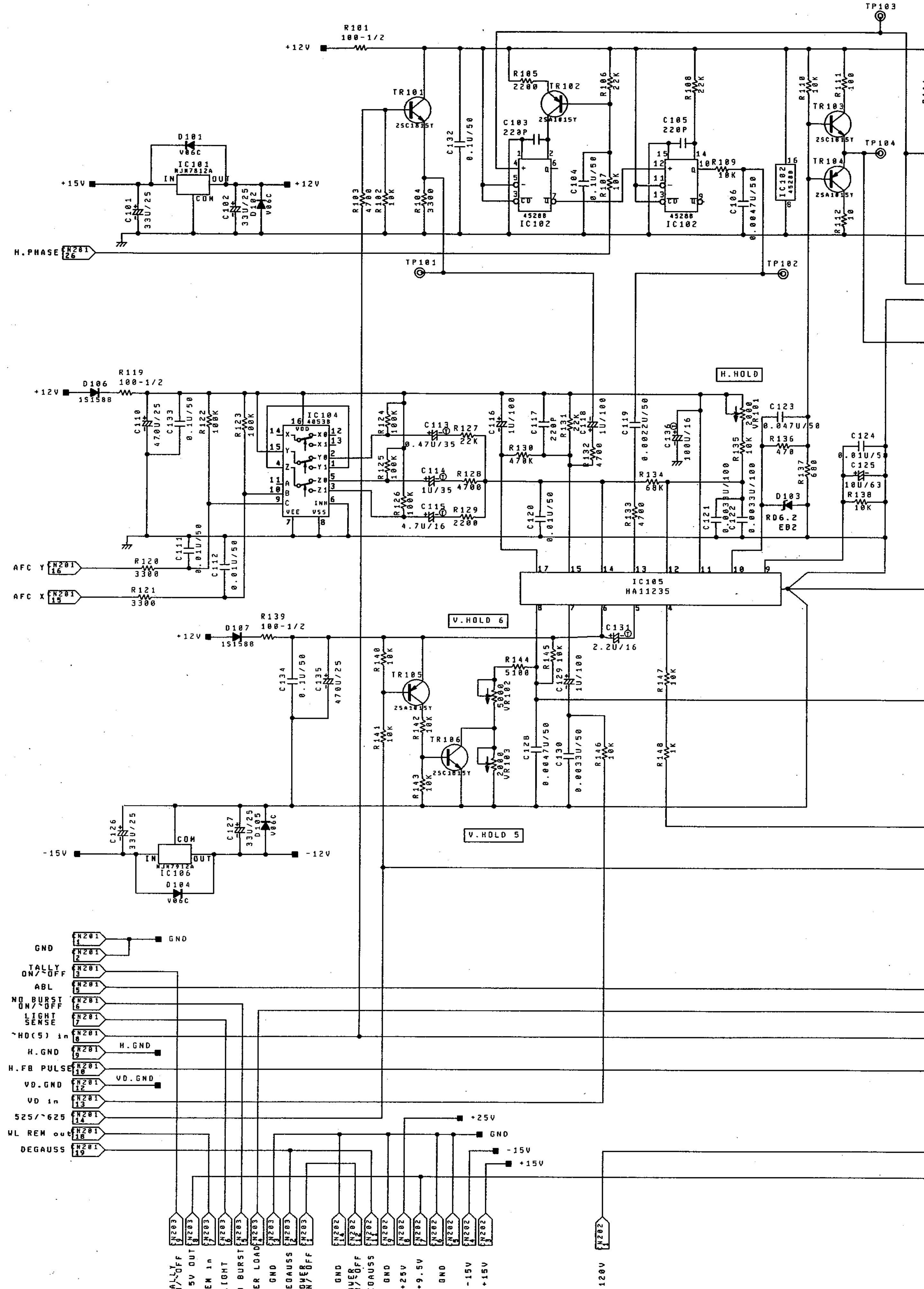


20/30 SERIES
DEF BOARD
PARTS LOCATION
P-70398D

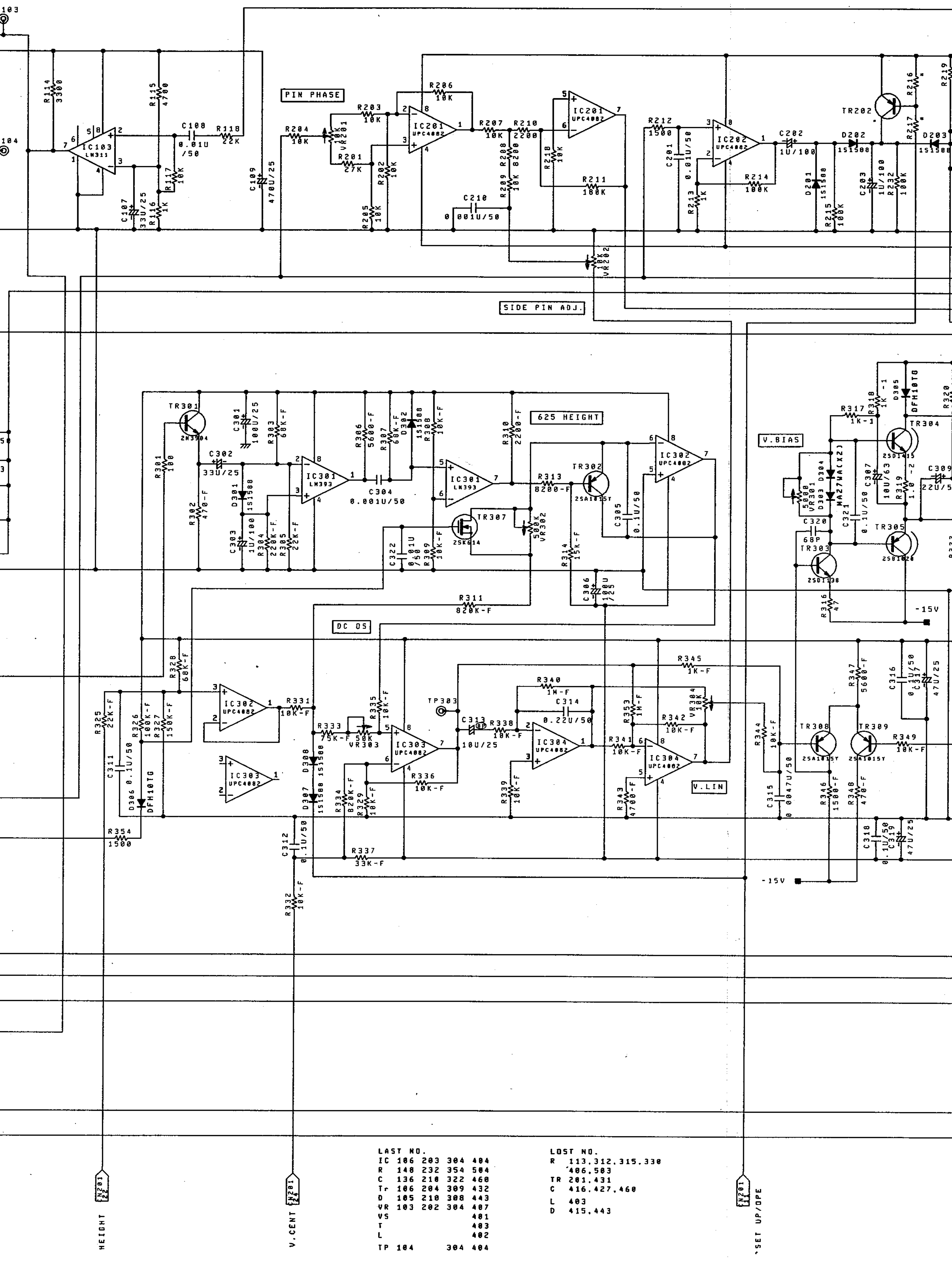
[dashed box] ······ 30 SERIES ONLY



04(V.LIN)
HEIGHT)
VR303(DC OS)
IC303
VR103(V.HOLD 5)
VR102(V.HOLD 6)
VR202(SIDE PIN ADJ)
VR101(H.HOLD)
VR201(PIN PHASE)
Ikegami
JAPAN
P-70398D
DEF
ELEX-C
VR407(PIN AMP)
VR401(WIDTH ADJ)
FOCUS)
VR405(BIAS)



TP103
R101 100-1/2
+12V
TR101 2SC1815Y
R105 2200
TR102 2SA1015Y
R106 22K
R108 22K
C103 220P
C105 220P
R110 10K
R111 100
TR103 2SC1815Y
TR104 2SA1015Y
TP104
D101 V06C
IC101 NJM7812A
IN OUT COM
+15V
+12V
C101 33U/25
C102 33U/25
D102 V06C
R103 4700
R102 10K
R104 3300
C132 0.1U/50
C104 0.1U/50
R107 10K
IC102 4528B
R109 10K
C106 0.0047U/50
IC102 4528B
R112 10
H.PHASE CN201 26
TP101
TP102
H.HOLD
R119 100-1/2
D106 1S1588
C110 470U/25
C133 0.1U/50
R122 100K
R123 100K
IC104 4053B
R124 100K
C113 0.47U/35
R127 22K
R125 100K
C114 1U/35
R128 4700
R126 100K
C115 4.7U/16
R129 2200
C116 1U/100
C117 220P
R130 470K
R131 22K
C118 1U/100
R132 4700
C119 0.0022U/50
C136 100U/16
VR101 2000
C123 0.047U/50
R135 10K
R136 470
R137 680
C124 0.01U/50
C125 10U/63
R138 10K
D103 RD6.2 EB2
R134 68K
R133 4700
C120 0.01U/50
C121 0.0033U/100
C122 0.0033U/100
C111 0.01U/50
C112 0.01U/50
AFC Y CN201 16
R120 3300
AFC X CN201 15
R121 3300
IC105 HA11235
V.HOLD 6
R139 100-1/2
D107 1S1588
C131 2.2U/16
C134 0.1U/50
C135 470U/25
R140 10K
TR105 2SA1015Y
R144 5100
R145 10K
VR102 5000
C129 1U/100
R147 10K
R141 10K
R142 10K
TR106 2SC1815Y
VR103 2000
R143 10K
C128 0.0047U/50
C130 0.0033U/50
R146 10K
R148 1K
C126 33U/25
IC106 NJM7912A
C127 33U/25
D105 V06C
-15V
-12V
D104 V06C
V.HOLD 5
GND
TALLY ON/~OFF
ABL
NO BURST ON/~OFF
LIGHT SENSE
~HD(5) in
H.GND
H.FB PULSE
VD.GND
VD in
525/~625
WL REM out
DEGAUSS
+25V
GND
-15V
+15V
CN203
TALLY ON/~OFF
+9.5V OUT
REM in
LIGHT
NO BURST
OVER LOAD
GND
DEGAUSS
POWER ON/~OFF
CN202
GND
POWER ON/~OFF
DEGAUSS
GND
+25V
+9.5V
GND
-15V
+15V
+120V

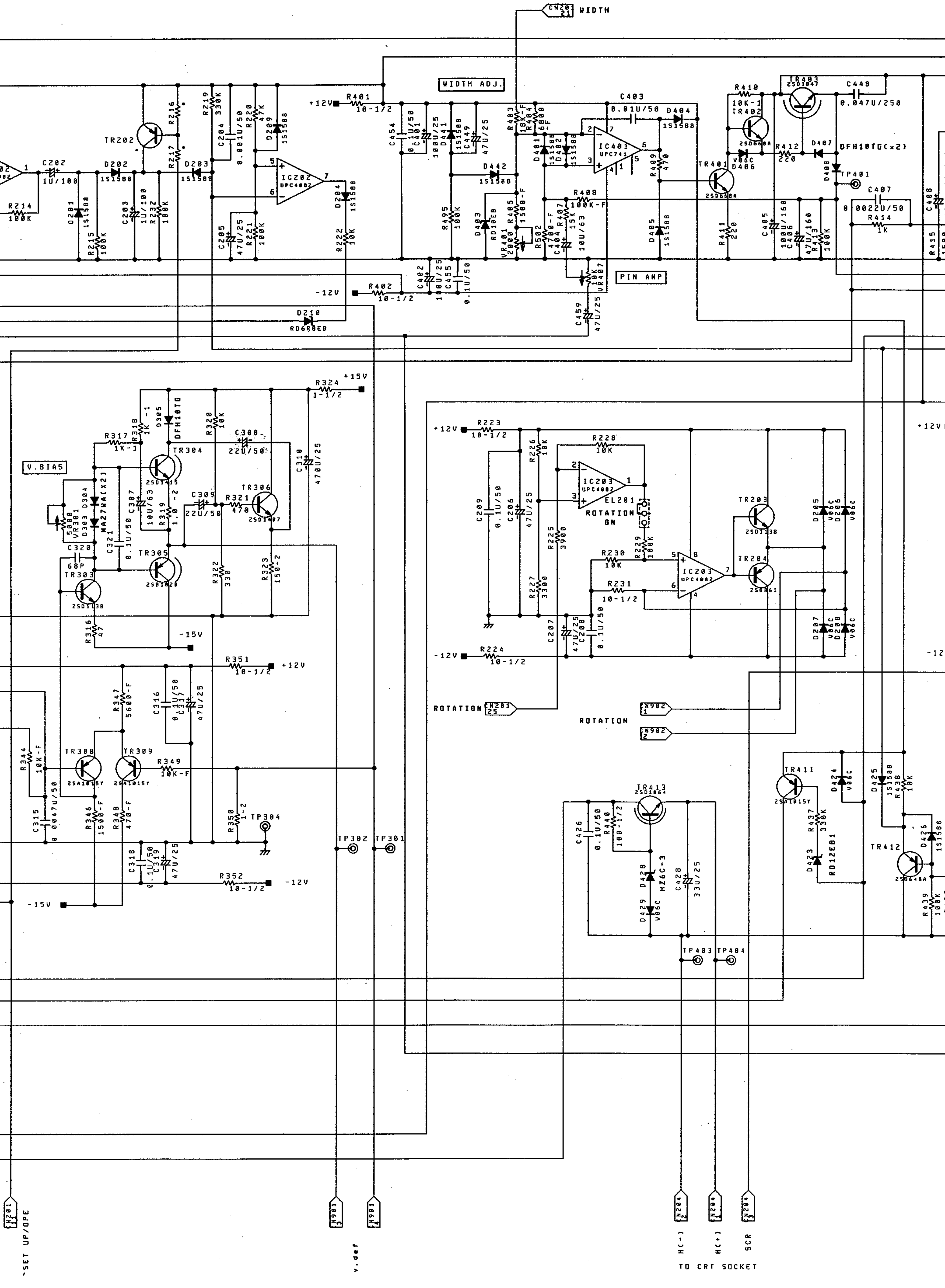


LAST NO.

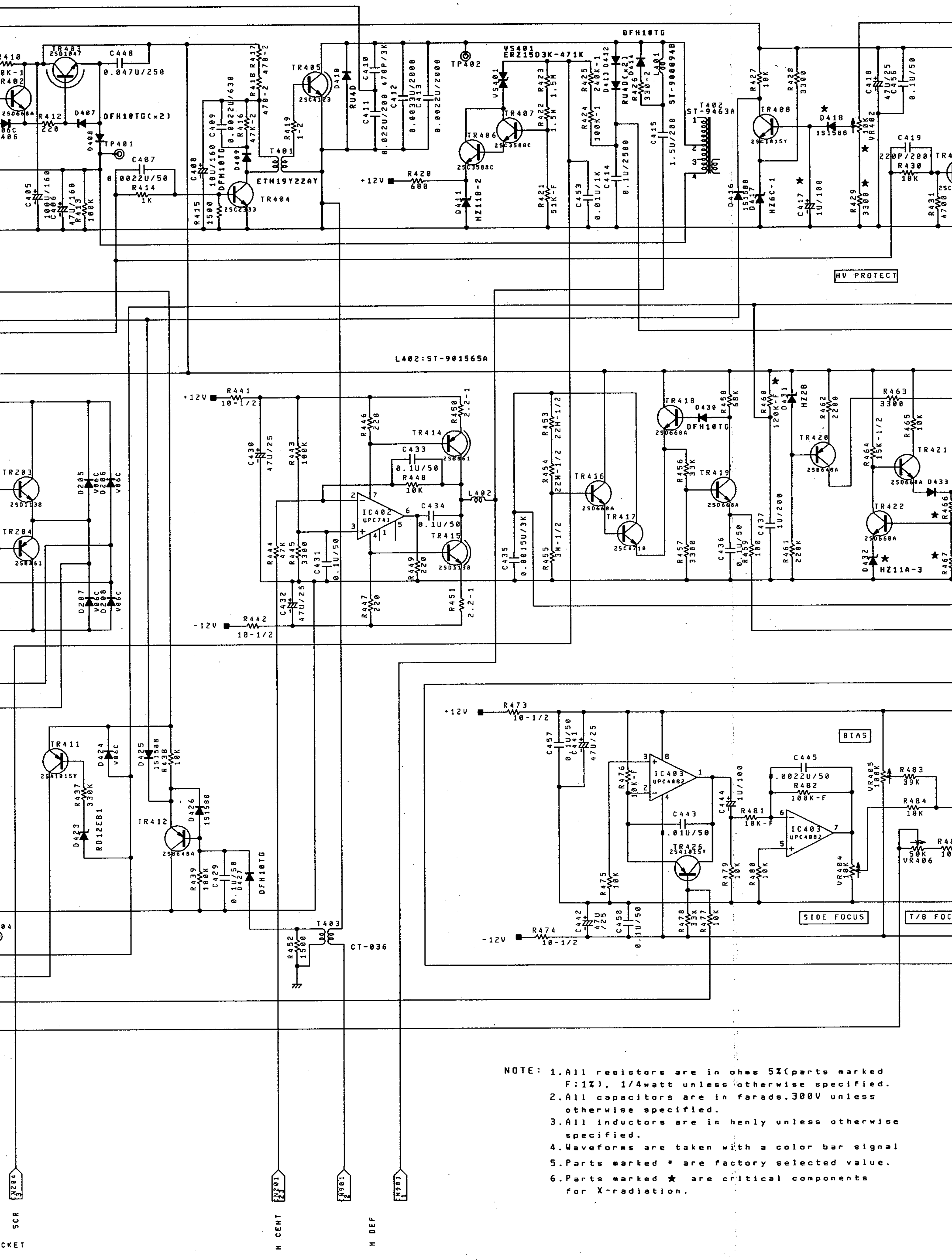
IC	106	203	304	404
R	148	232	354	504
C	136	210	322	460
Tr	106	204	309	432
D	105	210	308	443
VR	103	202	304	407
VS				401
T				403
L				402
TP	104		304	404

LOST NO.

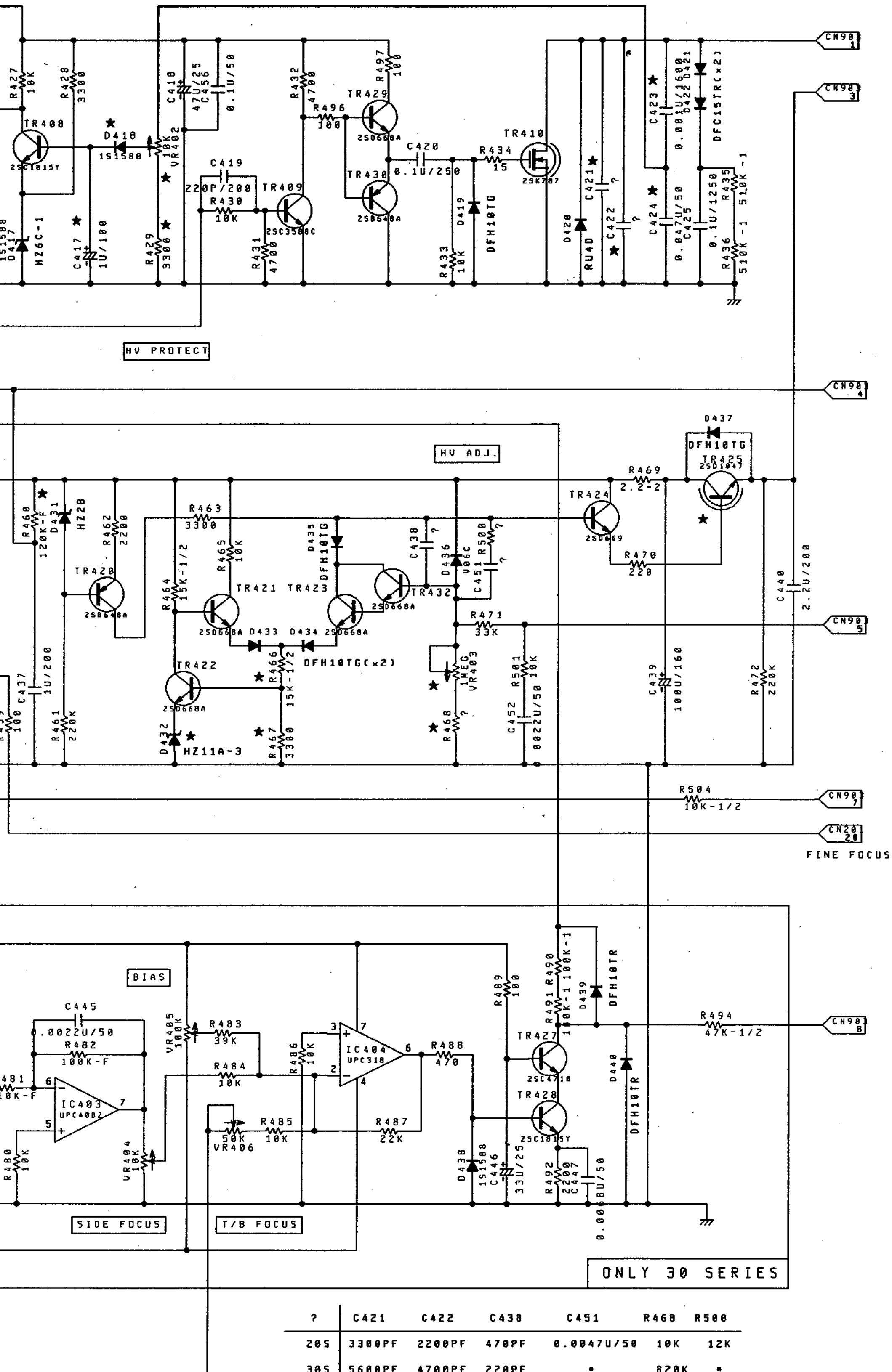
R	113,312,315,330, 406,503
TR	201,431
C	416,427,460
L	403
D	415,443



CN201 21 WIDTH
WIDTH ADJ.
PIN AMP
V.BIAS
ROTATION ON
ROTATION CN201 25
ROTATION
CN982 1
CN982 2
IC202 UPC4082
IC401 UPC741
IC203 UPC4082
TR202
TR304 2SD1415
TR305 2SD1828
TR303 2SD1138
TR306 2SD1407
TR308 2SA1015Y
TR309 2SA1015Y
TR401 2SD668A
TR402 2SD668A
TR403 2SD1047
TR203 2SD1138
TR204 2SB861
TR411 2SA1015Y
TR412 2SD648A
TR413 2SD1064
+12V
-12V
+15V
-15V
TP301
TP302
TP304
TP401
TP403
TP404
CN201 11 SET UP/OPE
CN901 3 V.def
CN901 4
CN204 2 H(-)
CN204 1 H(+)
CN204 3 SCR
TO CRT SOCKET



NOTE: 1. All resistors are in ohms 5%(parts marked F:1%), 1/4watt unless otherwise specified.
2. All capacitors are in farads. 300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.



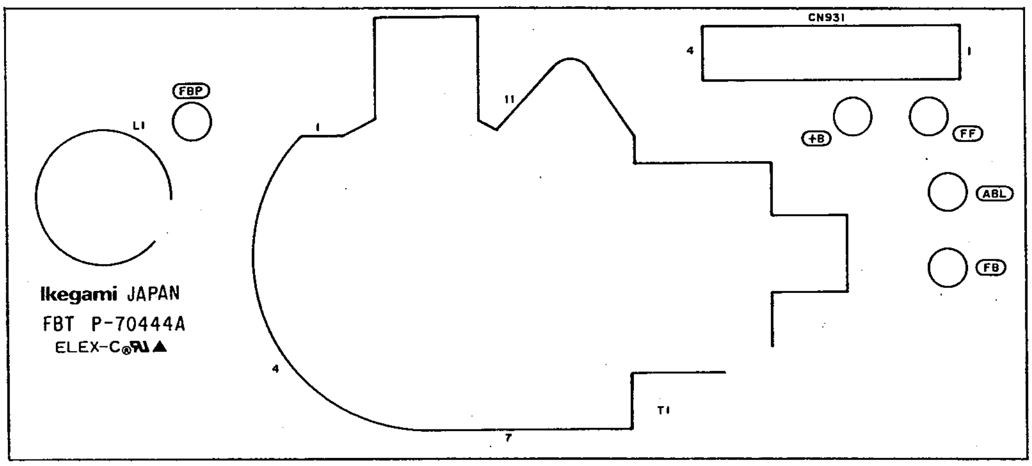
?	C421	C422	C438	C451	R468	R500
20S	3300PF	2200PF	470PF	0.0047U/50	10K	12K
30S	5600PF	4700PF	220PF	*	820K	*

s 5%(parts marked
therwise specified.
arads,300V unless

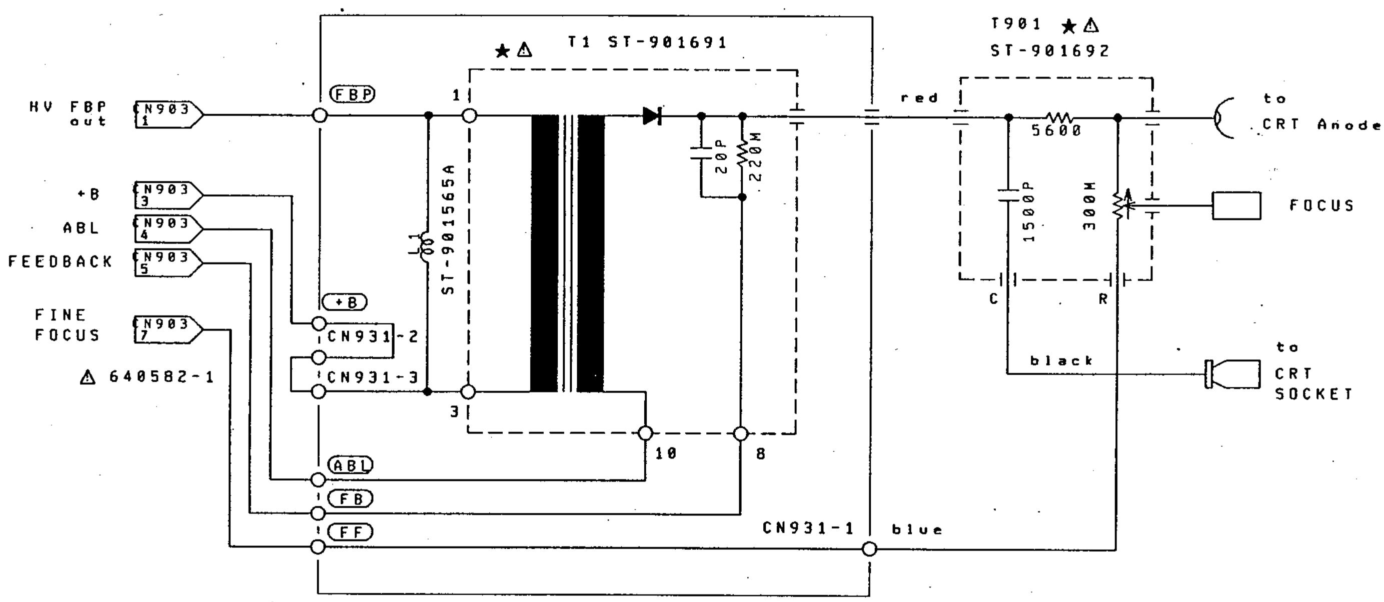
ly unless otherwise

n a color bar signal
ory selected value.
ical components

20/30 SERIES
COLOR MONITOR
DEF BOARD
Schematic Diagram
C11-904361



20 SERIES
FBT BOARD
PARTS LOCATION
P-70444A



NOTE:

1. All resistors are in ohms 5%(parts marked F:1%), 1/10watt unless otherwise specified.
2. All capacitors are in farads, 300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

20 SERIES
COLOR MONITOR
FBT BOARD
Schematic Diagram
C4-904247

1-2. POWER BOARD

(1) Outline

The AC power supplied to the monitor is inputted to this board and the DC voltage(such as +120V, ±15V, +155V, and +9.5V) used for deflection and video system boards is outputted.

(2) Circuit Description

(a) AC Voltage Switching Circuit

As shown in Fig.3-2-1. and Fig.3-2-2. , RL2 is OFF for 220V and ON for 120V when the AC input is rectified, and the DC output has roughly the same voltage. By turning this relay (RL2) ON/OFF by the circuit described in section ***(b)***, there is no need for manual switching of AC input voltage.

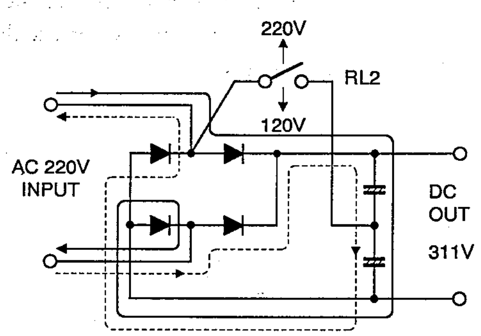


Fig. 3-2-1

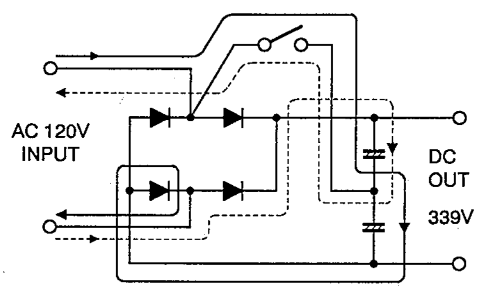


Fig. 3-2-2

(b) AC Voltage Detection Circuit

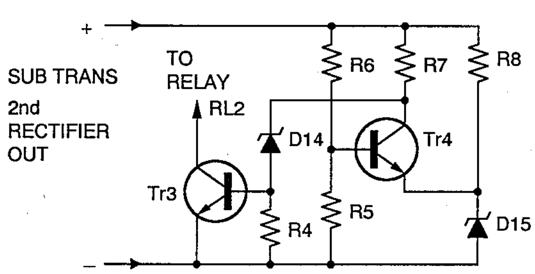


Fig. 3-2-3

The secondary voltage of power transformer T2 for AC voltage detection and power for driving the relay is AC 16V when AC 120V is inputted, and 29V when AC 220V is inputted. Rectifiers D2 through D5 are connected to the secondary side of this transformer, and the output is applied as shown in Fig. 3-2-3. When AC 220V is applied, the voltage at the base of Tr4 rises past the voltage (6V) of Zener D15, and Tr4 is turned ON. As this also turns D14 (6.8V, Zener)OFF, Tr3 is also turned OFF, and RL2 is OFF. When AC 120V, RL2 is turned ON by the completely opposite process.

(c) Switching Control Circuit

Switching control is performed by IC1. The main functions of this IC are as follows.

① There is a built-in oscillation circuit and the free-run frequency is approximately 90kHz.

② Fluctuations of the +120V output are amplified by IC2, pass through a photocoupler (PC1), and are inputted to comparator input IC1-①.
The other input of the comparator is Pin ⑭ , and the Pin ⑧ DC voltage is divided by R24 and R25 and applied to Pin ⑭ as the reference voltage.

③ There is a built-in shunt regulator for the reference voltage and internal power supply.
The input/output is by Pin ⑧ , and the voltage is approximately 6.6V.

④ In order to protect against overcurrent, there is 0.33 Ω of resistance (R21) on the ground side of the output transistor, and IC output pulses are cut off by returning this voltage to Pin ⑤ .

(d) Switching Output Circuit

The pulses from Pin ⑦ of IC1 are inverted by Tr6, pass through the Tr7 and Tr8 buffers, and are applied to the output transistor (Tr9). Transformer operation is by the ON/OFF system.

(f) DEGAUSS Circuit

The power supply for the degauss coil is directly supplied from AC. ON/OFF is by RL3 and the Tr10 drive circuit. RL3 also functions as the prevention of the rush current when the power is turned on. Also, RL3 functions as ON/OFF of the R1 resistor.

(3) Adjustment Procedure

a) VR1(MIN. VOL)

① Connect the probe to the drain of Tr9.

Note Because of the primary side, be sure to connect the GND of the probe to the anode of D16.

② Set the AC input voltage to 85V.

③ Adjust VR1 so that the drain waveform is duty-limited.

b) VR2(+B ADJ)

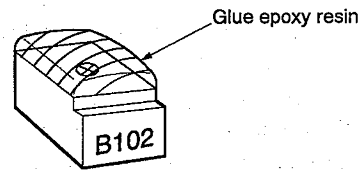
① Connect a high-accuracy digital voltmeter to TP5.

Note Because of the secondary side, be sure to connect the minus side of voltmeter to TP7.

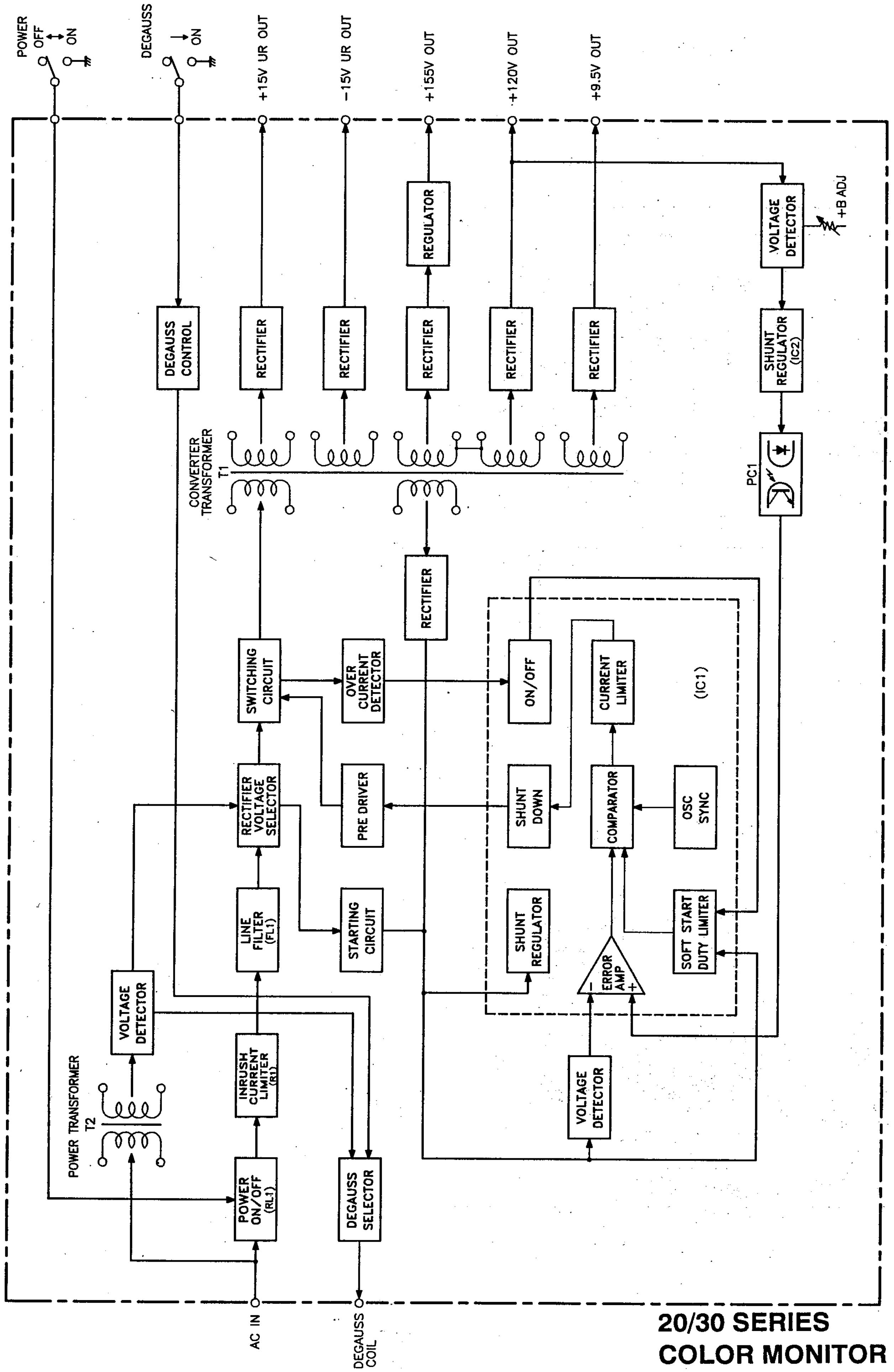
② Adjust VR2 so that the DC voltage is +120V.

Precaution

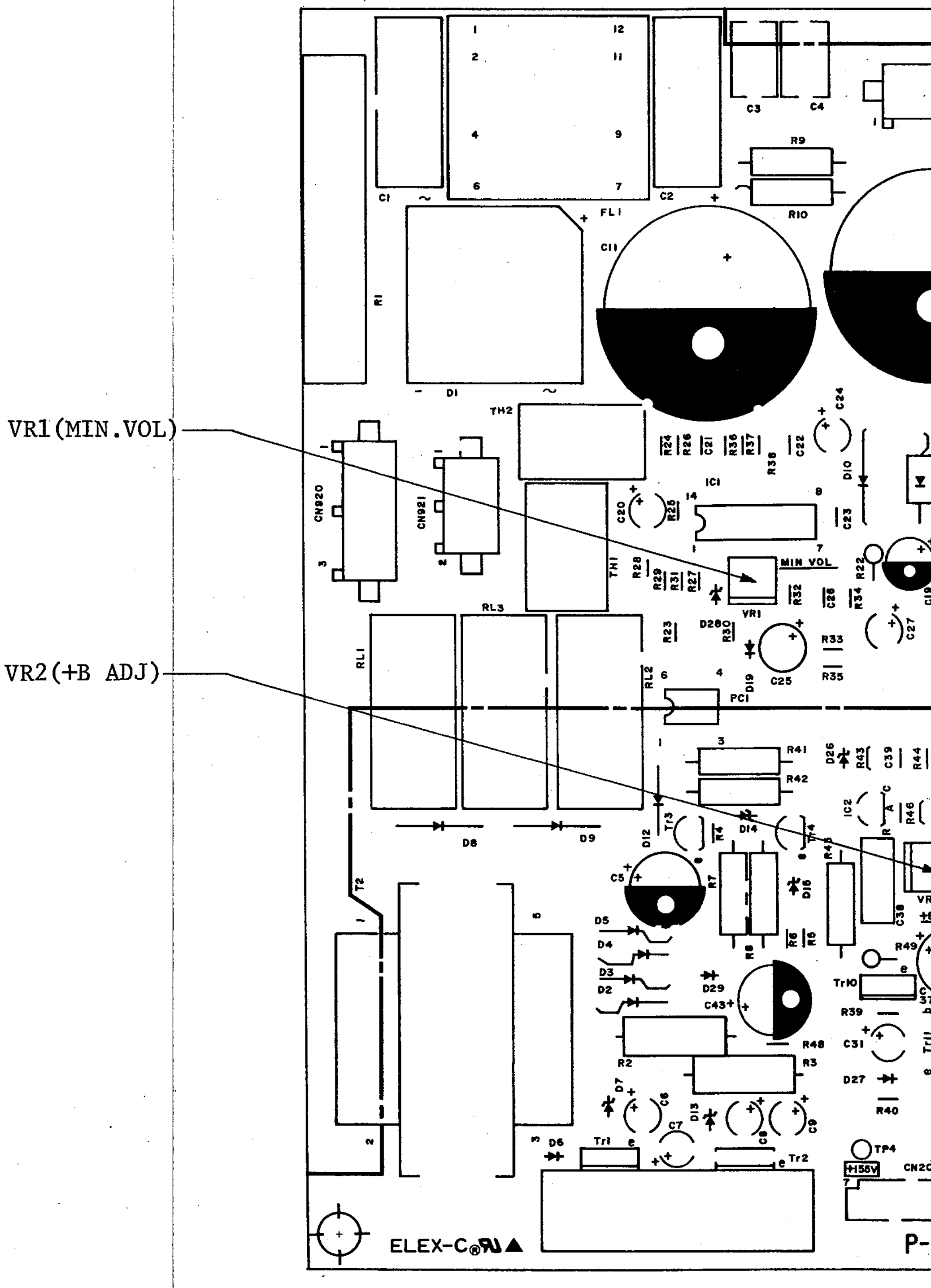
- The section marked as PRIMARY in the schematic diagram is the primary side of the power supply. Be sure not to short with the secondary side.
- This control is not for field servicing and is fixed with glue after setting to avoid X-ray radiation which may cause one component failure in the circuit and misadjustment of this control. The sealing method is shown in the diagram.



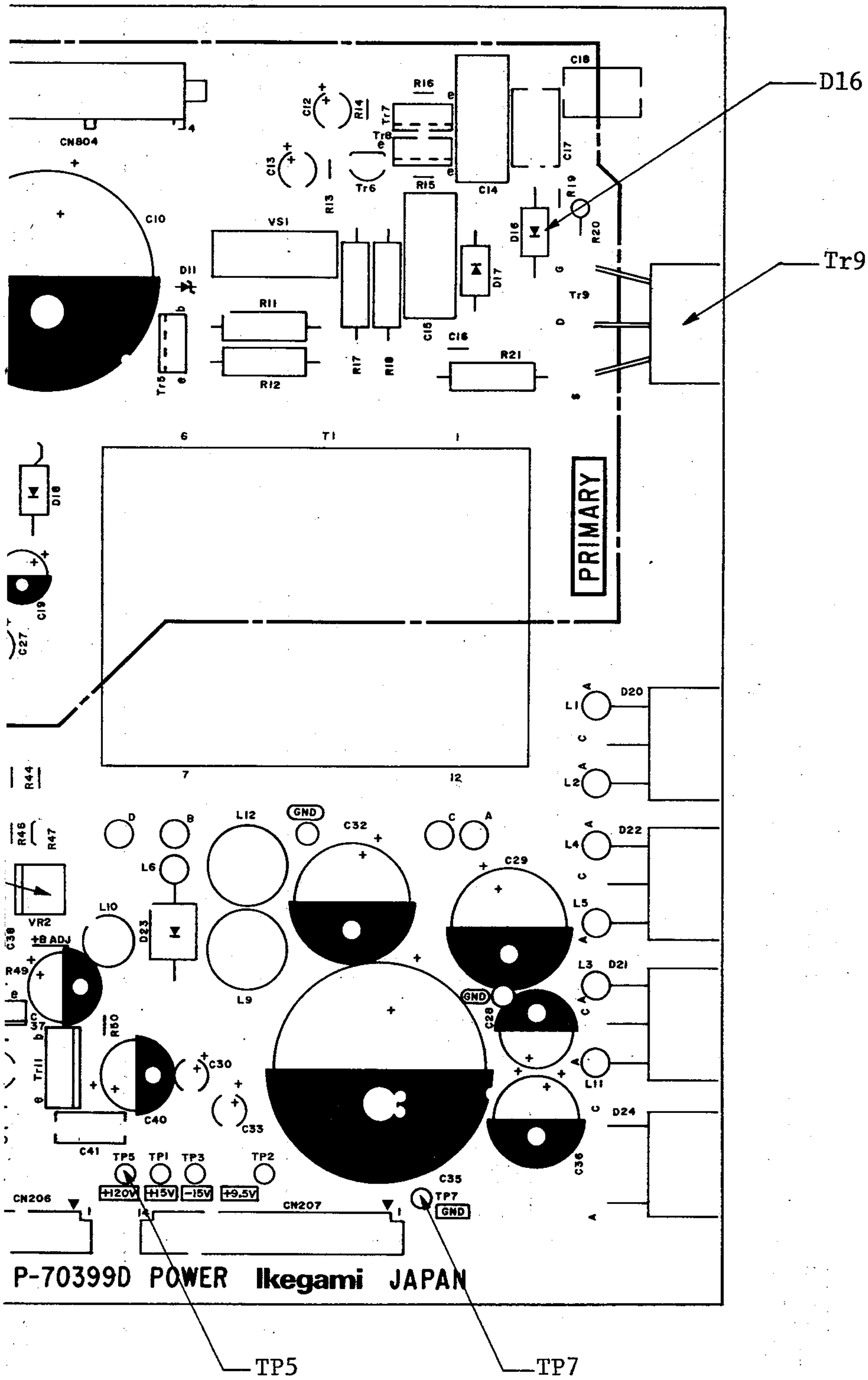
This adjustment is required when replacement of the parts marked with ★, (★) in the schematic diagram of the POWER BOARD is done.

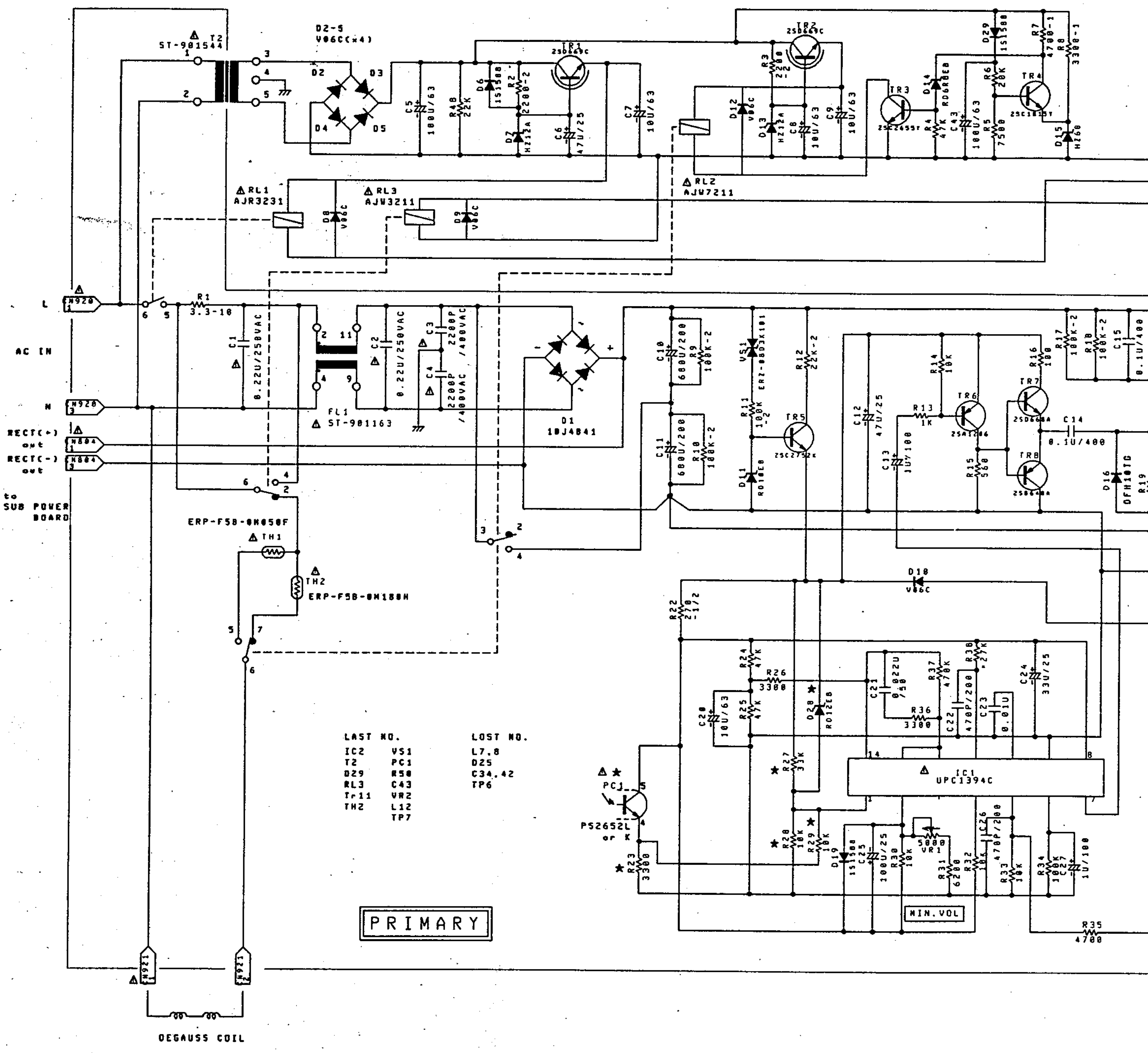


20/30 SERIES
COLOR MONITOR
POWER BOARD
Block Diagram
C3-904324

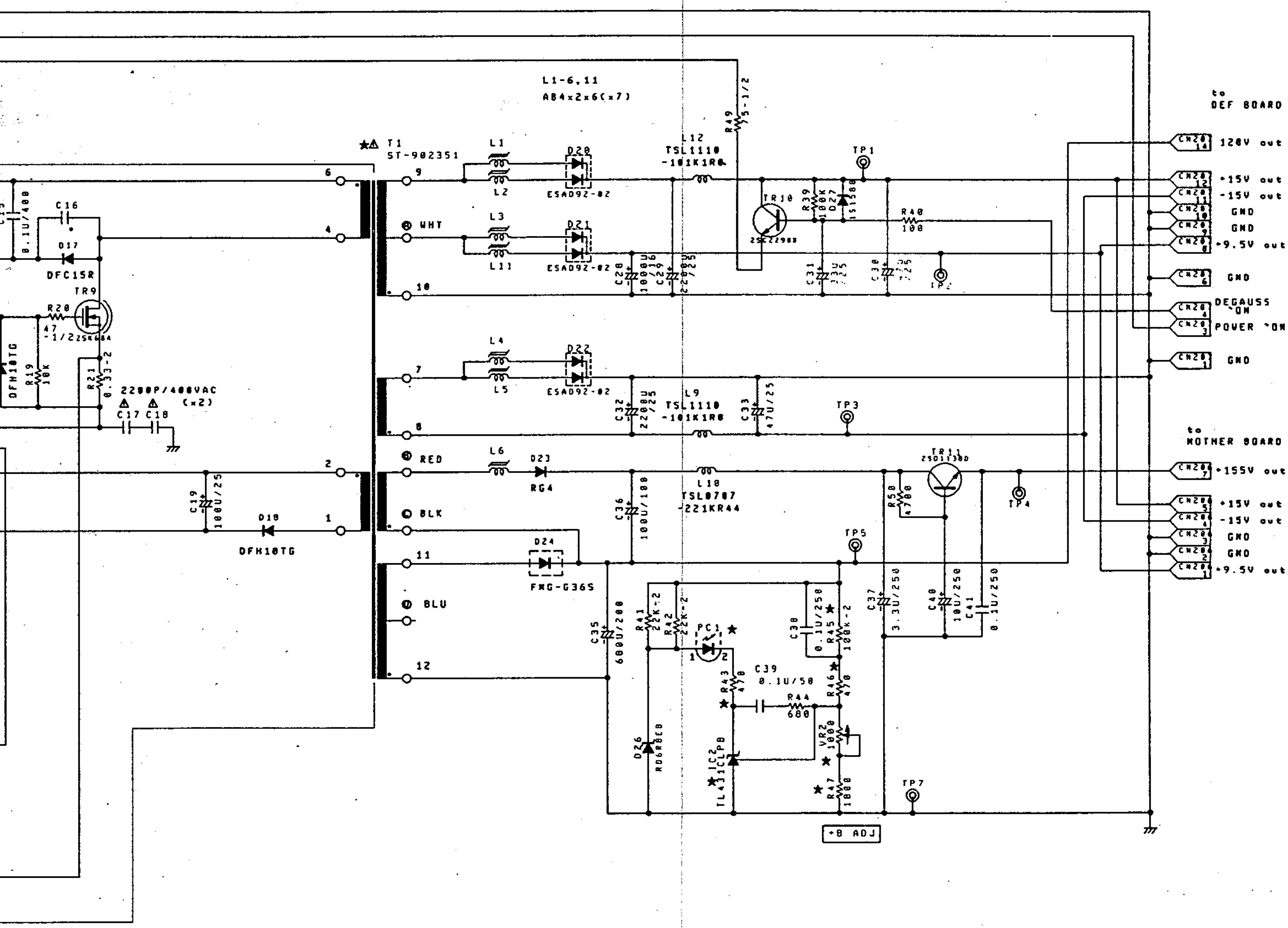


20/30 SERIES
POWER BOARD
PARTS LOCATION
P-70399D


D16
Tr9
TP5
TP7
PRIMARY
P-70399D POWER Ikegami JAPAN
CN804
C10
C12
C13
R13
R14
R15
R16
Tr6
Tr7
Tr8
C14
C17
C18
R19
R20
VS1
D11
R11
R12
Tr5
R17
R18
C15
C16
D17
R21
T1
D18
C19
C27
R44
R46
R47
VR2
+B ADJ
L6
L10
D23
L12
L9
GND
C32
C29
C28
L1
L2
L3
L4
L5
L11
D20
D21
D22
D24
R49
R50
Tr11
C30
C33
C40
C41
C35
C36
TP1
TP2
TP3
+120V
+15V
-15V
+9.5V
CN206
CN207



T2
ST-901544
D2-5
V06C(x4)
TR1
2SD669C
TR2
2SD669C
TR3
2SC2655Y
TR4
2SC1815Y
RL1
AJR3231
RL2
AJW7211
RL3
AJW3211
AC IN
L
N
RECT(+) out
RECT(-) out
to SUB POWER BOARD
R1
3.3-10
C1
0.22U/250VAC
C2
0.22U/250VAC
C3
2200P /400VAC
C4
2200P /400VAC
FL1
ST-901163
D1
10J4B41
ERP-F5B-0N050F
TH1
TH2
ERP-F5B-0N180H
C10
680U/200
C11
680U/200
R9
100K-2
R10
100K-2
VS1
ERZ-08D3K101
R11
100K -2
R12
22K-2
TR5
2SC2752K
TR6
2SA1206
TR7
2SD668A
TR8
2SB648A
C14
0.1U/400
C15
0.1U/400
R17
100K-2
R18
100K-2
D16
OFH10TG
D18
V06C
IC1
UPC1394C
PC1
PS2652L or K
VR1
5000
MIN.VOL
R35
4700
LAST NO.
IC2 VS1
T2 PC1
D29 R50
RL3 C43
Tr11 VR2
TH2 L12
TP7
LOST NO.
L7.8
D25
C34.42
TP6
PRIMARY
DEGAUSS COIL



NOTE:

1. All resistors are in ohms 5%(parts marked F:1%), 1/10watt unless otherwise specified.
2. All capacitors are in farads,300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

20/30 SERIES COLOR MONITOR POWER BOARD

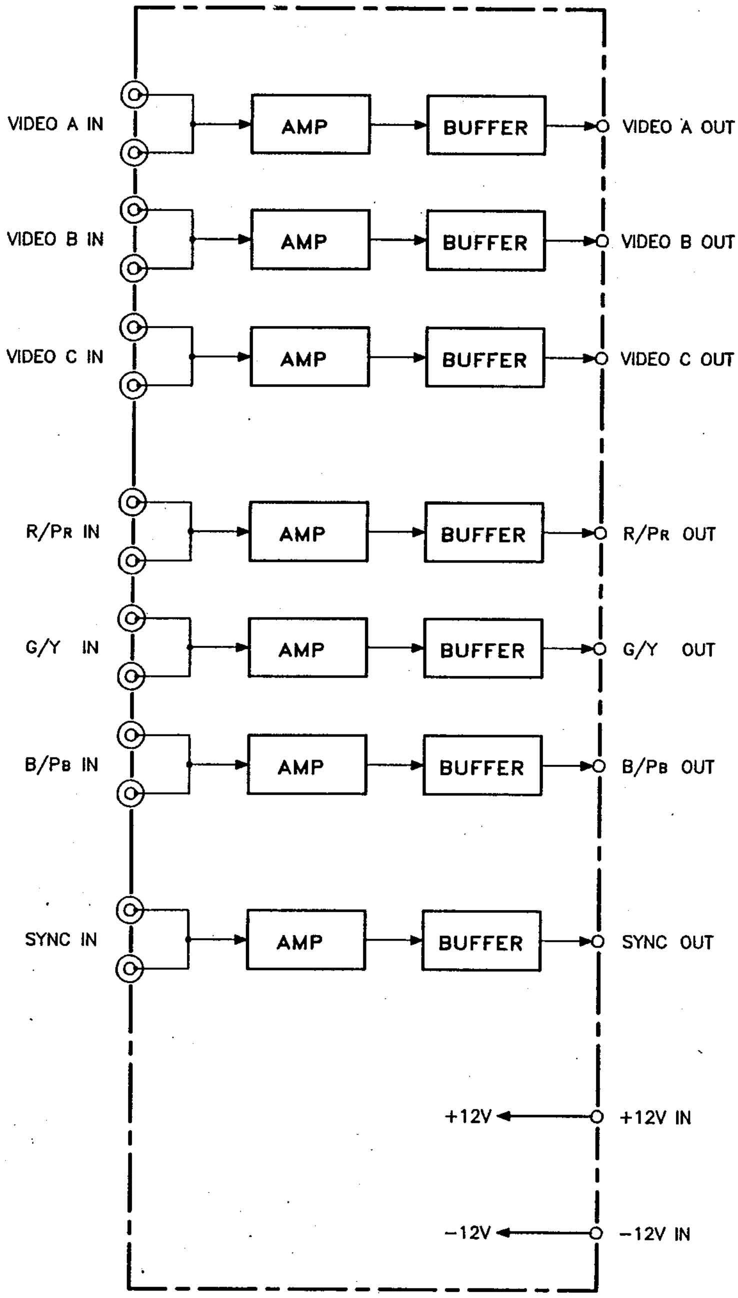
Schematic Diagram

C21-904182B

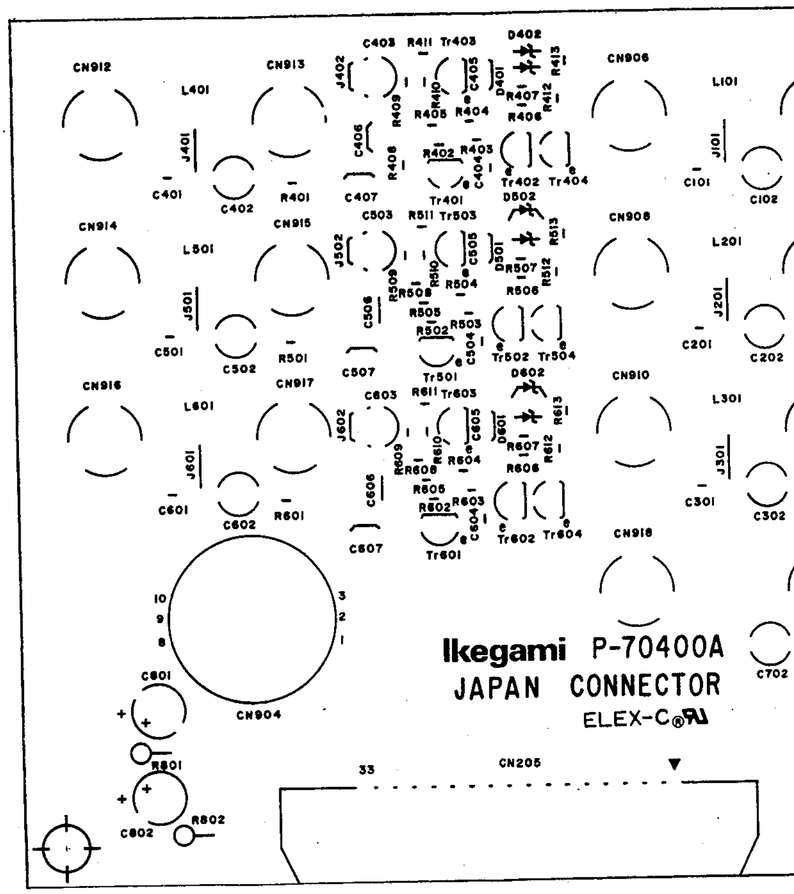
4. CONNECTOR BOARD

(1) Outline

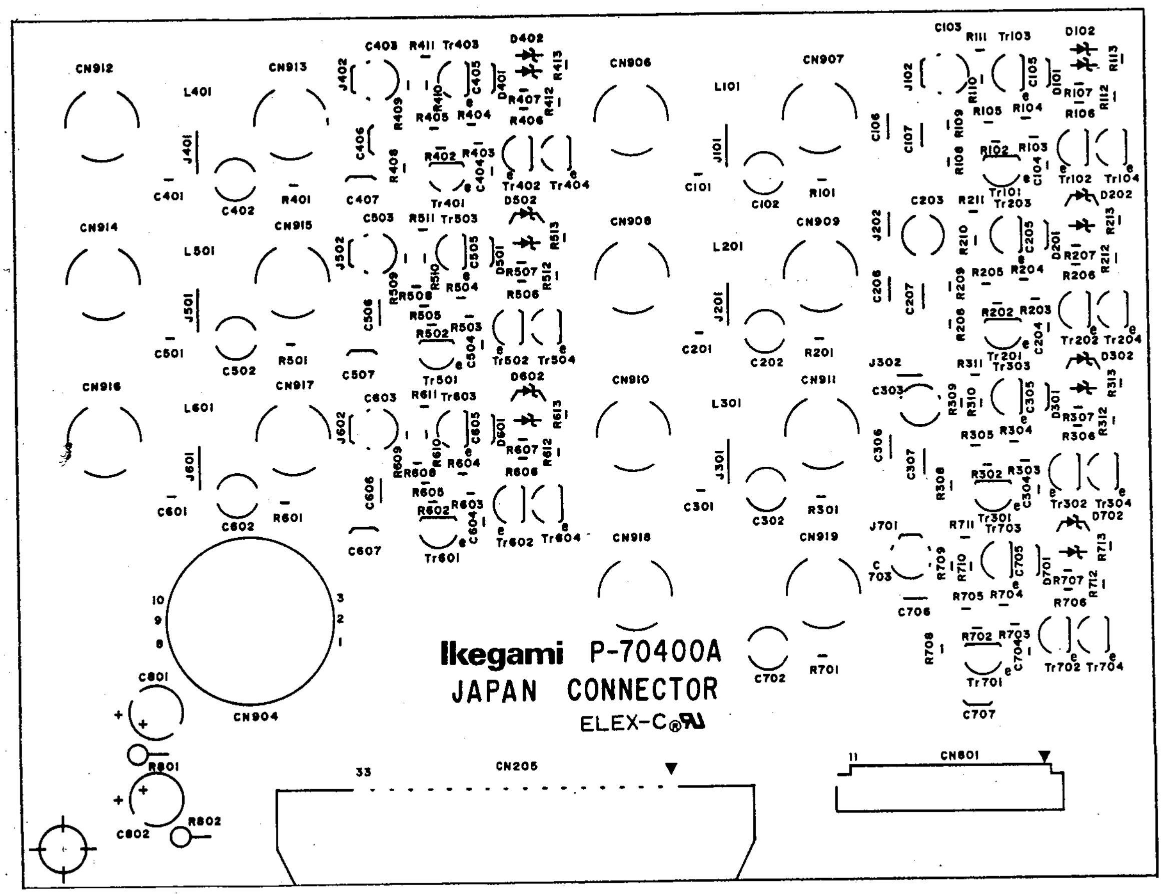
This board supplies various video signals inputted from BNC connectors to the INTERFACE BOARD.

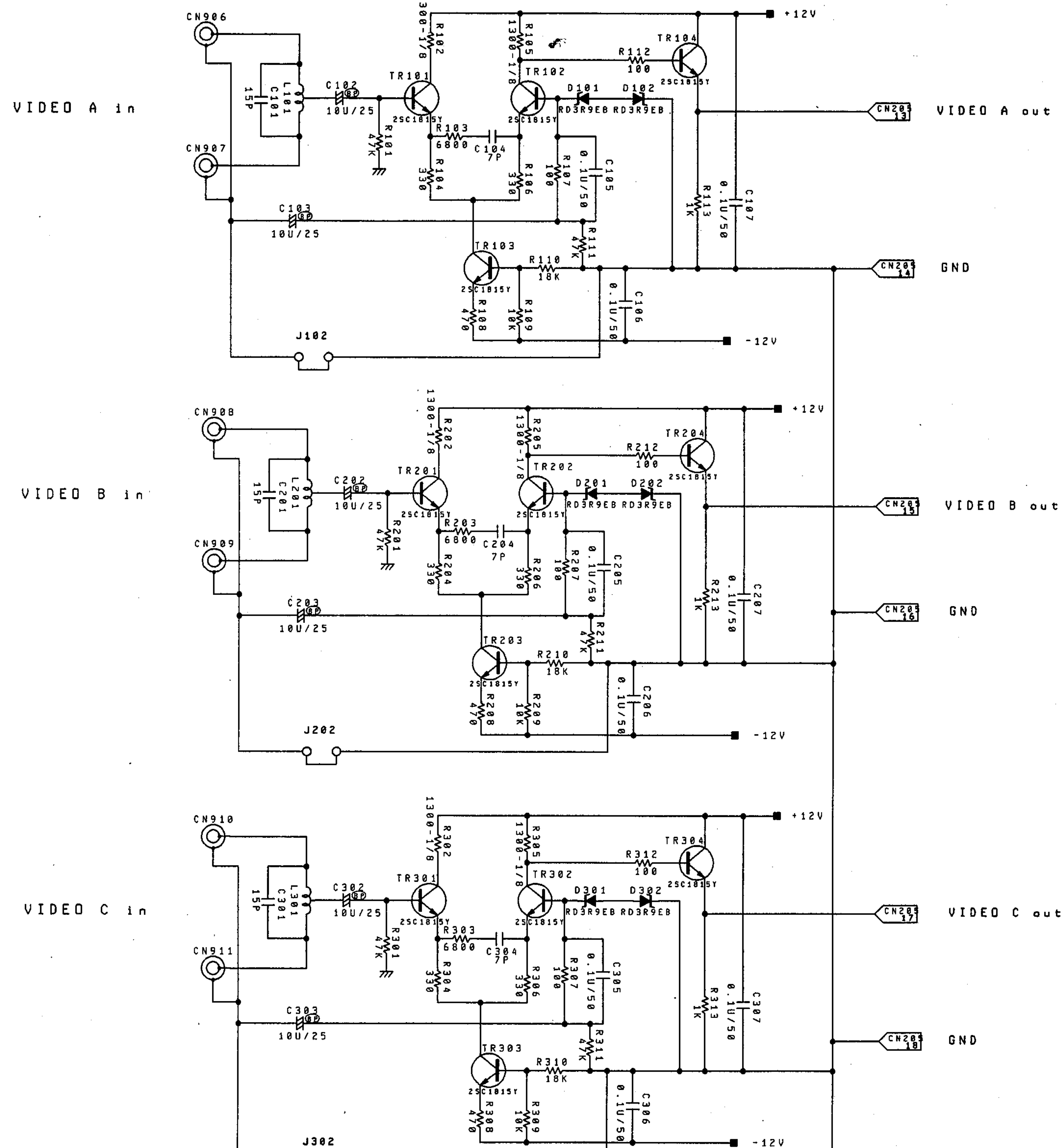


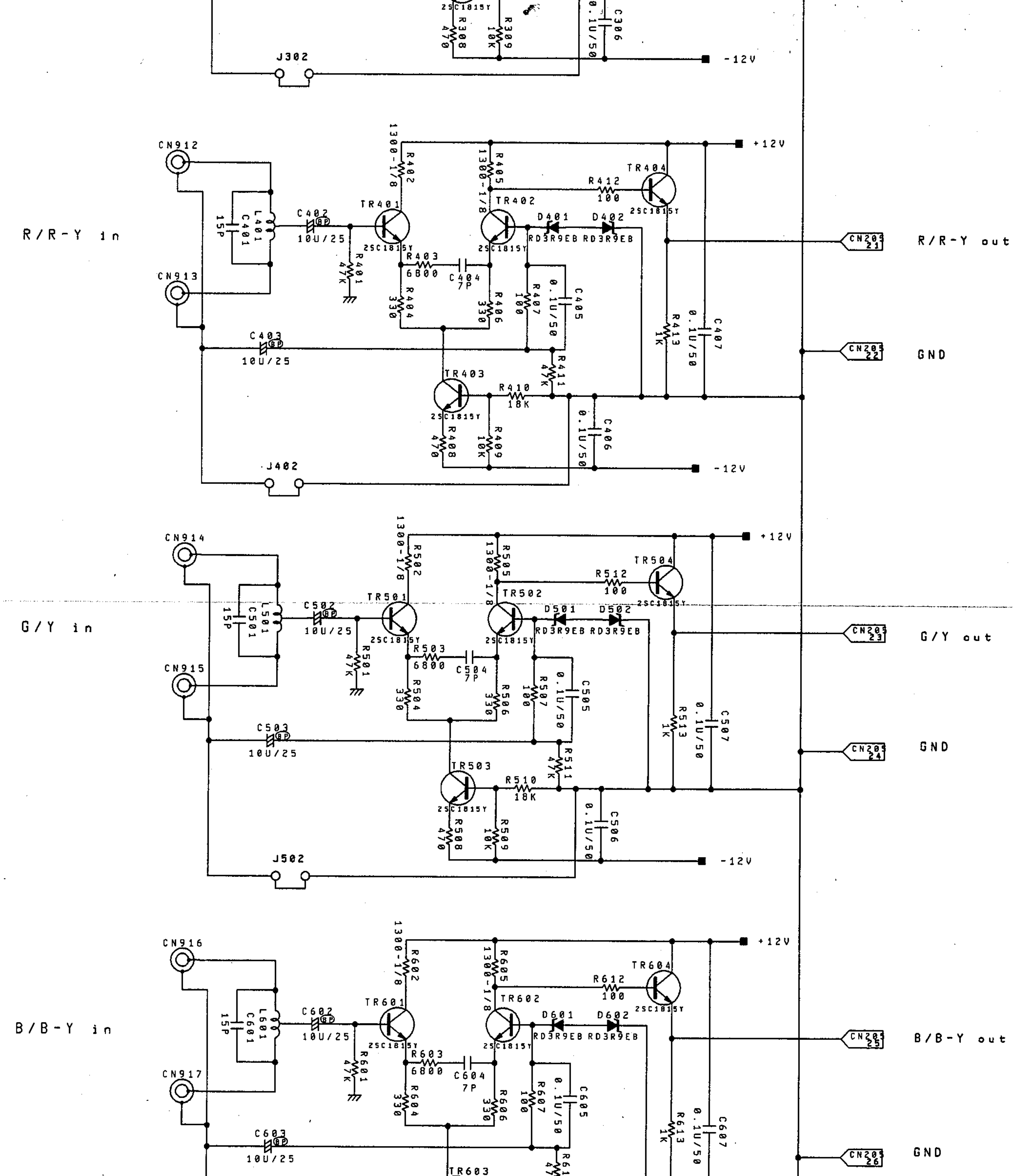
20/30 SERIES
COLOR MONITOR
CONNECTOR BOARD
Block Diagram
C4-904322



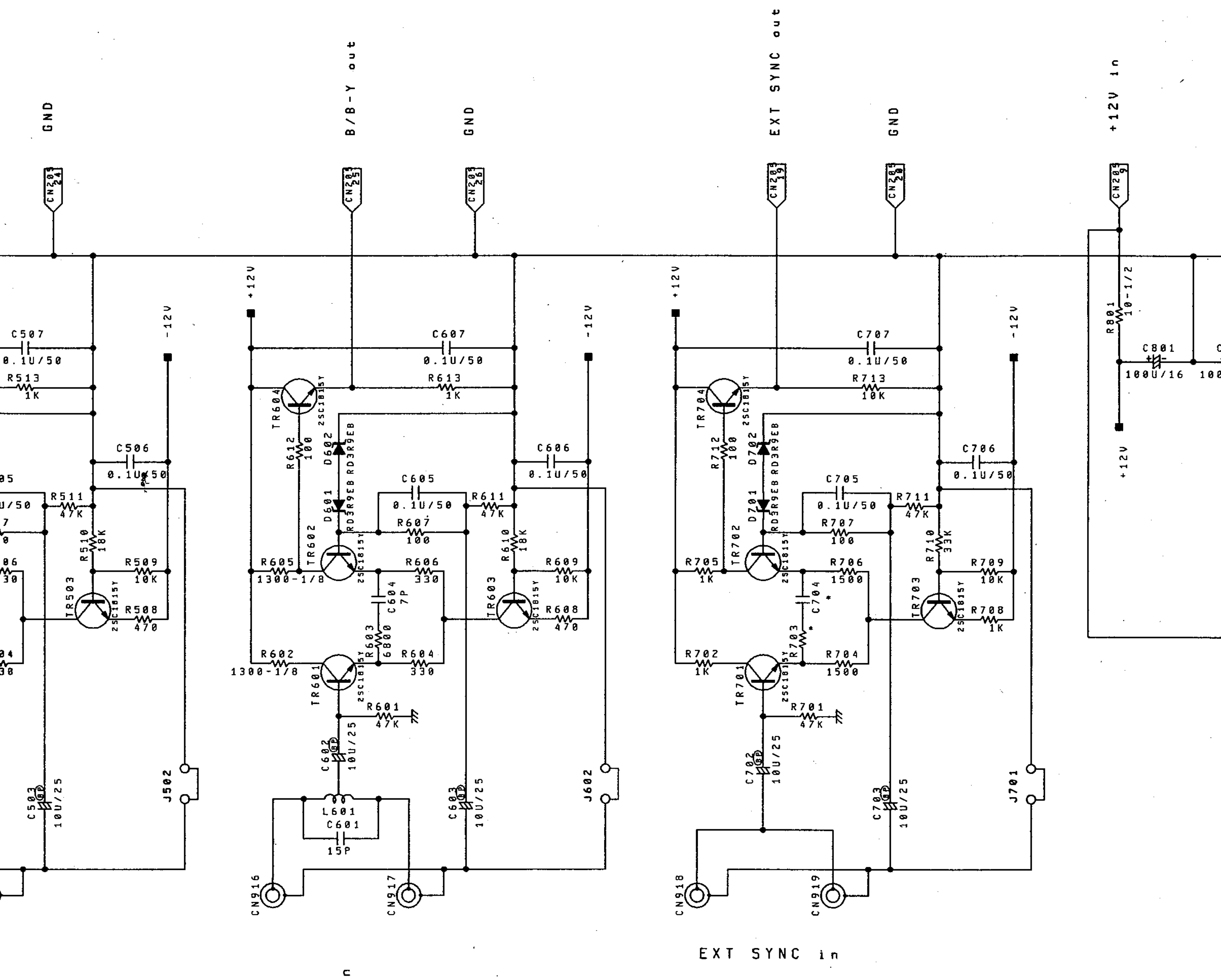
**20/30 SERIES
CONNECTOR BOARD
PARTS LOCATION
P-70400A**


Ikegami P-70400A
JAPAN CONNECTOR
ELEX-C
CN904
CN205
CN601


VIDEO A in
VIDEO A out
VIDEO B in
VIDEO B out
VIDEO C in
VIDEO C out
GND
+12V
-12V
CN906
CN907
CN908
CN909
CN910
CN911
J102
J202
J302
TR101
TR102
TR103
TR104
TR201
TR202
TR203
TR204
TR301
TR302
TR303
TR304
2SC1815Y
D101
D102
D201
D202
D301
D302
RD3R9EB
L101
L201
L301
C101 15P
C201 15P
C301 15P
C102 10U/25
C103 10U/25
C104 7P
C105 0.1U/50
C106 0.1U/50
C107 0.1U/50
C202 10U/25
C203 10U/25
C204 7P
C205 0.1U/50
C206 0.1U/50
C207 0.1U/50
C302 10U/25
C303 10U/25
C304 7P
C305 0.1U/50
C306 0.1U/50
C307 0.1U/50
R101 47K
R102 1300-1/8
R103 6800
R104 330
R105 1300-1/8
R106 330
R107 100
R108 470
R109 10K
R110 18K
R111 47K
R112 100
R113 1K
R201 47K
R202 1300-1/8
R203 6800
R204 330
R205 1300-1/8
R206 330
R207 100
R208 470
R209 10K
R210 18K
R211 47K
R212 100
R213 1K
R301 47K
R302 1300-1/8
R303 6800
R304 330
R305 1300-1/8
R306 330
R307 100
R308 470
R309 10K
R310 18K
R311 47K
R312 100
R313 1K

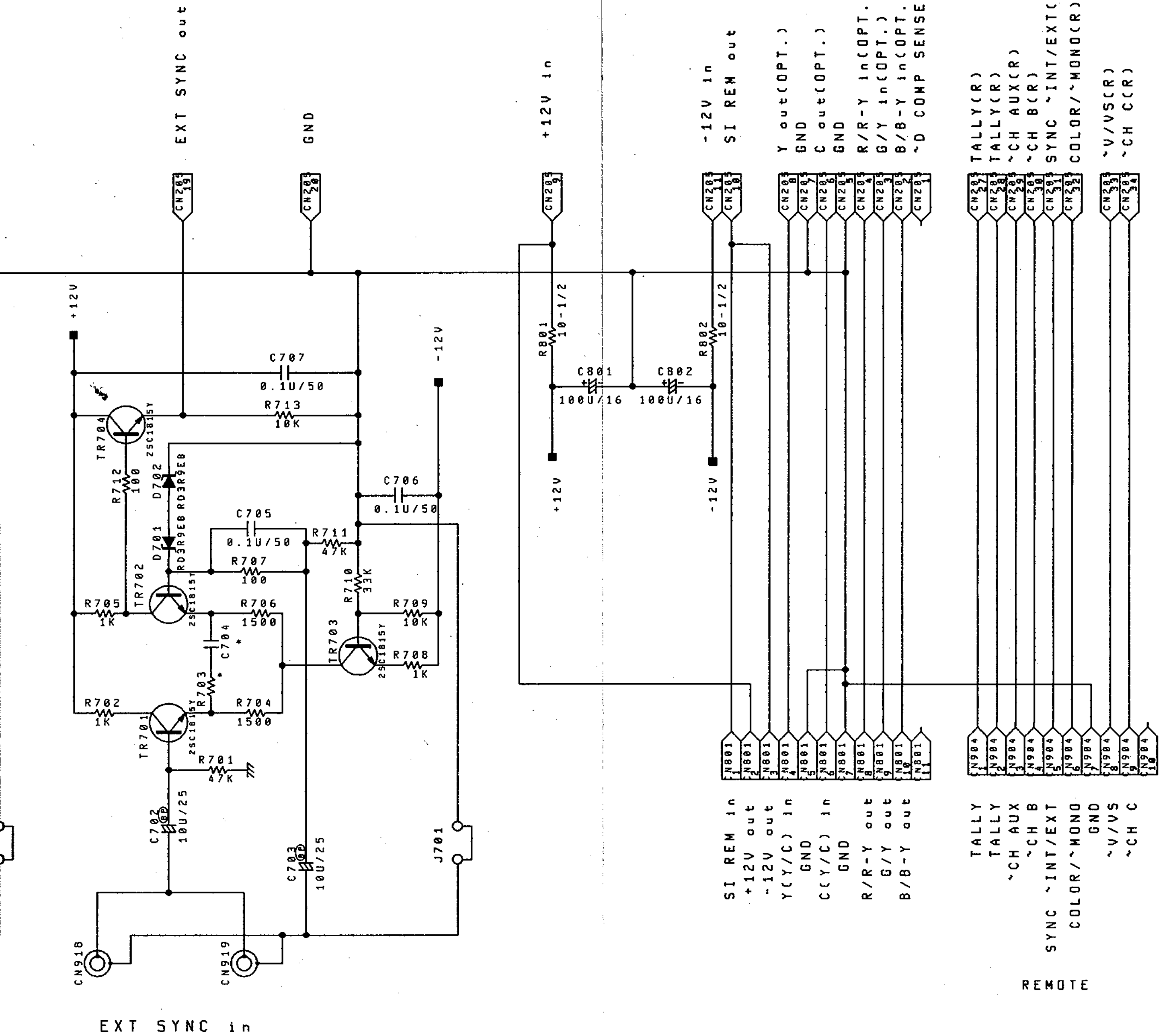


R/R-Y in
G/Y in
B/B-Y in
R/R-Y out
G/Y out
B/B-Y out
GND
CN205 21
CN205 22
CN205 23
CN205 24
CN205 25
CN205 26
+12V
-12V
CN912
CN913
CN914
CN915
CN916
CN917
J302
J402
J502
TR401
TR402
TR403
TR404
TR501
TR502
TR503
TR504
TR601
TR602
TR603
TR604
2SC1815Y
D401
D402
D501
D502
D601
D602
RD3R9EB
L401
L501
L601
C401 15P
C501 15P
C601 15P
C402 10U/25
C403 10U/25
C502 10U/25
C503 10U/25
C602 10U/25
C603 10U/25
C404 7P
C504 7P
C604 7P
C405 0.1U/50
C406 0.1U/50
C407 0.1U/50
C505 0.1U/50
C506 0.1U/50
C507 0.1U/50
C605 0.1U/50
C607 0.1U/50
C306 0.1U/50
R401 47K
R402 1300-1/8
R403 6800
R404 330
R405 1300-1/8
R406 330
R407 100
R408 470
R409 10K
R410 18K
R411 47K
R412 100
R413 1K
R501 47K
R502 1300-1/8
R503 6800
R504 330
R505 1300-1/8
R506 330
R507 100
R508 470
R509 10K
R510 18K
R511 47K
R512 100
R513 1K
R601 47K
R602 1300-1/8
R603 6800
R604 330
R605 1300-1/8
R606 330
R607 100
R612 100
R613 1K
R308 470
R309 10K



NOTE:

1. All resistors are in ohms 5%(parts marked F:1%), 1/10watt unless otherwise specified.
2. All capacitors are in farads,300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.



TE:

ll resistors are in ohms 5%(parts marked F:1%), 1/10watt unless otherwise specified.
ll capacitors are in farads,300V unless otherwise specified.
ll inductors are in henly unless otherwise specified.
aveforms are taken with a color bar signal input.
Parts marked * are factory selected value.
Parts marked ★ are critical components for X-radiation.

20/30 SERIES
COLOR MONITOR
CONNECTOR BOARD
Schematic Diagram
C11-904184A

5. CONTROL SYSTEM

(1) Outline

This system reads the position datas of each switch, rotary encoder and remote number on the front panel, and transmits them to the CPU on the MPU BOARD. The CPU controls each LED, etc..

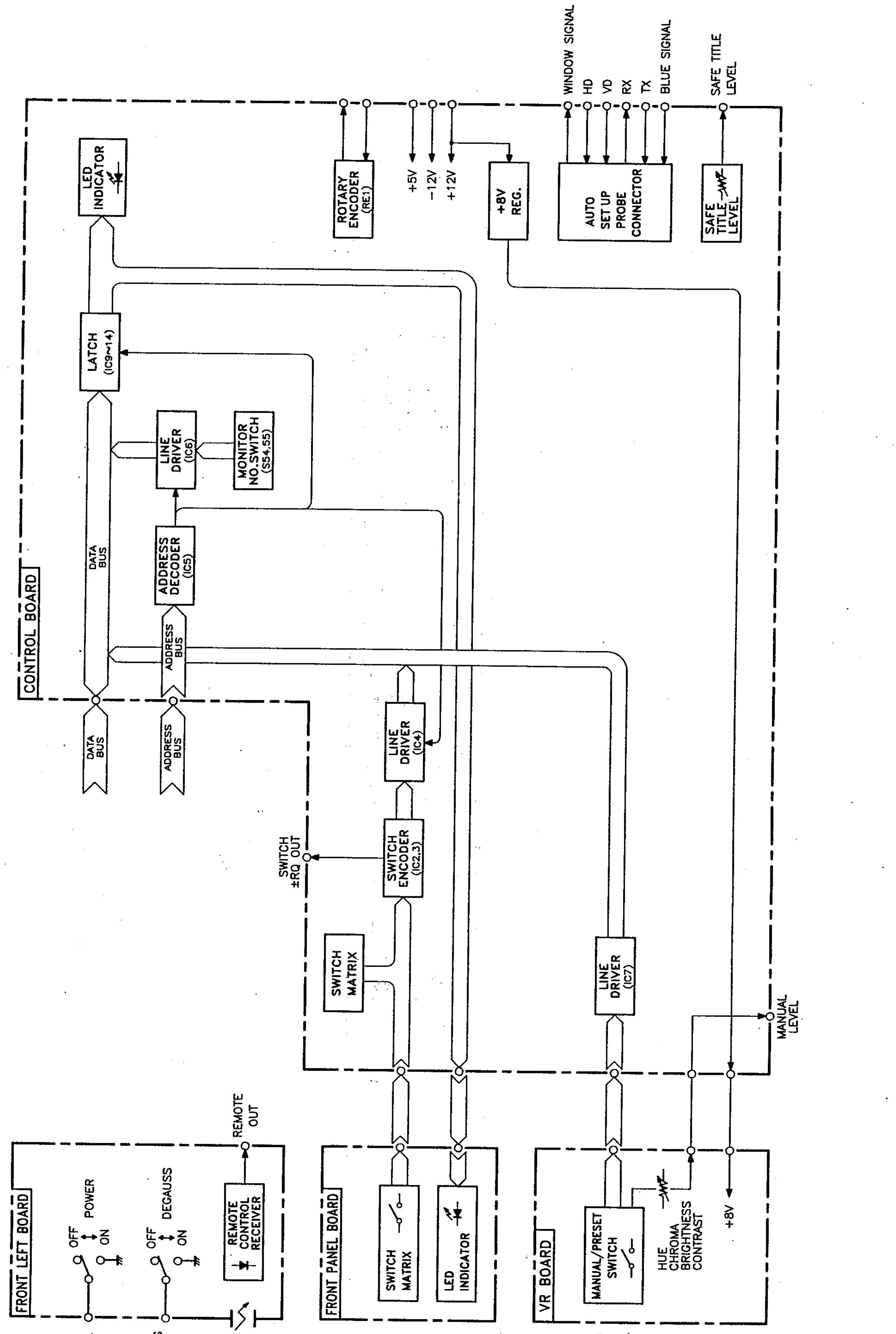
(2) Circuit Description

(a) Switch matrix circuit

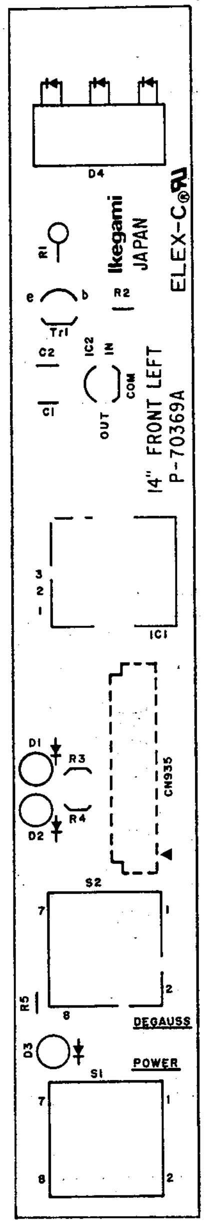
The switches on the front panel are of a matrix configuration and consists of IC1 ~ IC3. IC2 and IC3 are provided for encoder. When the switch is pressed, the output turns into a 6- bit code, which is read in CPU. When the switch is pressed, Pin 15 of IC3 outputs "H". At this moment, CPU interrupts the program and reads the switch code.

(b) I/O processings

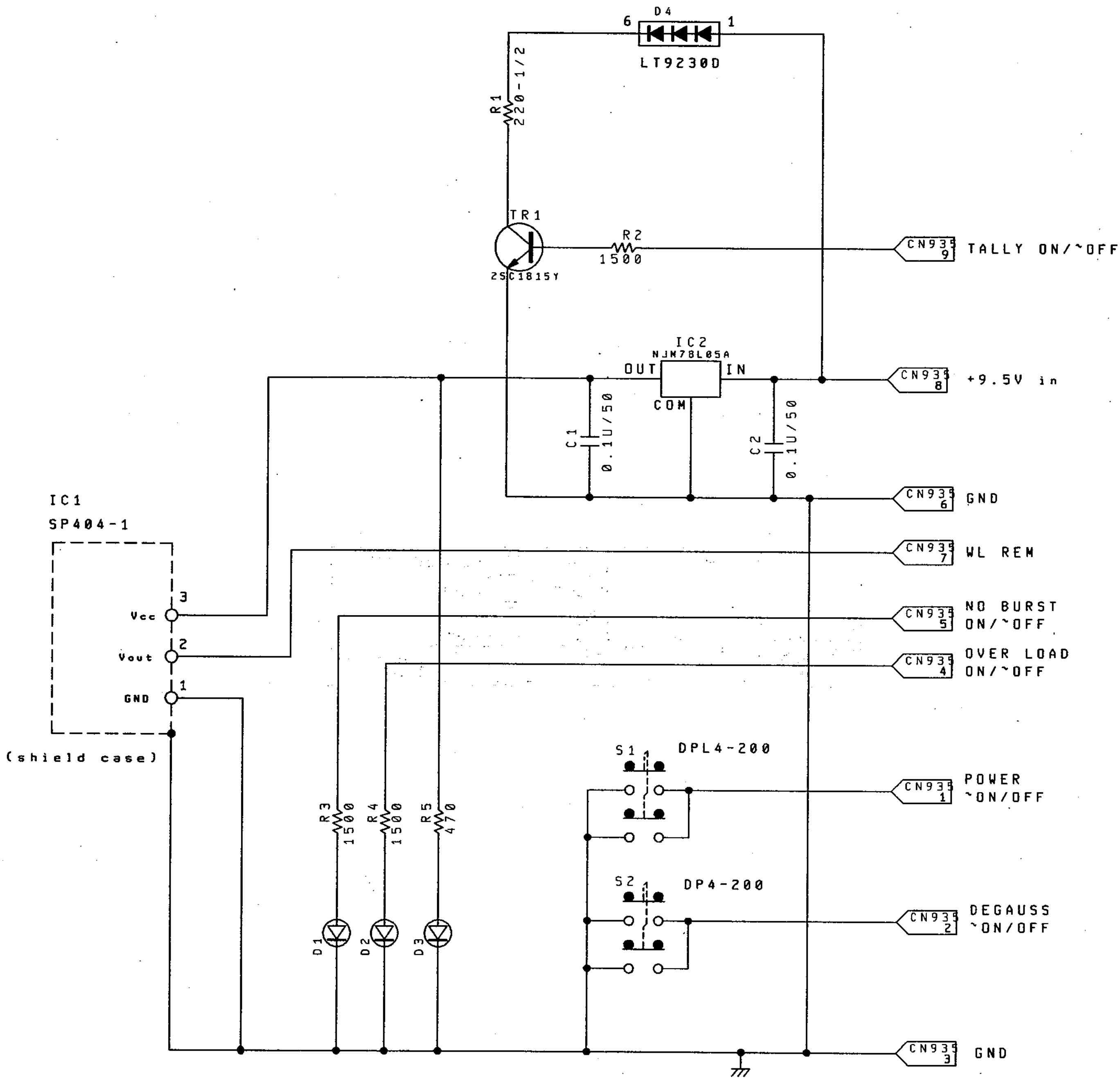
The address bus connecting from the MPU BOARD is allocated to address 8 ($2000 ~ $2007) by the address decoder of IC5 and latches each input/output port. The latched data is transmitted to CPU through the data bus connecting from the MPU BOARD.



20/30 SERIES
COLOR MONITOR
CONTROL SYSTEM
Block Diagram
C3-904325



20/30 SERIES
14″ FRONT LEFT BOARD
PARTS LOCATION
P-70369A



NOTE: 1. All resistors are in ohms 5%(parts marked F;1%), 1/4watt unless otherwise specified.

2. All capacitors are in farads,300V unless otherwise specified.

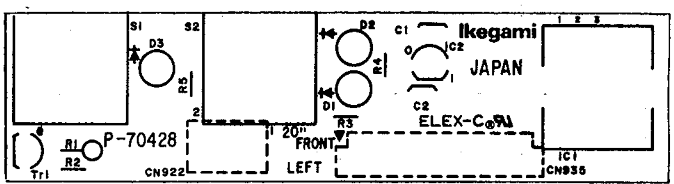
3. All inductors are in henly unless otherwise specified.

4. Waveforms are taken with a color bar signal input.

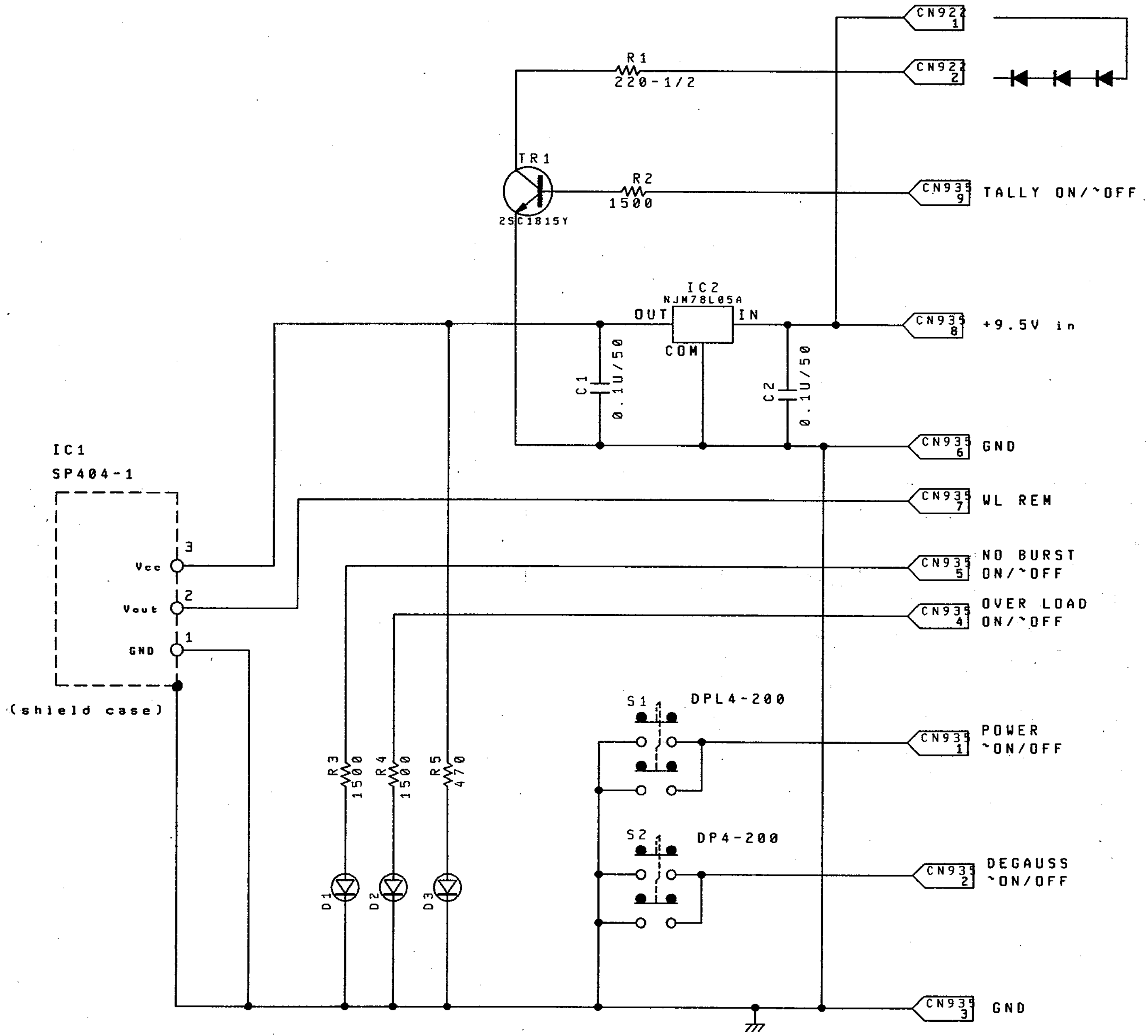
5. Parts marked * are factory selected value.

6. Parts marked ★ are critical components for X-radiation.

20/30 SERIES
COLOR MONITOR
14″ FRONT LEFT BOARD
Schematic Diagram
C4-904142A

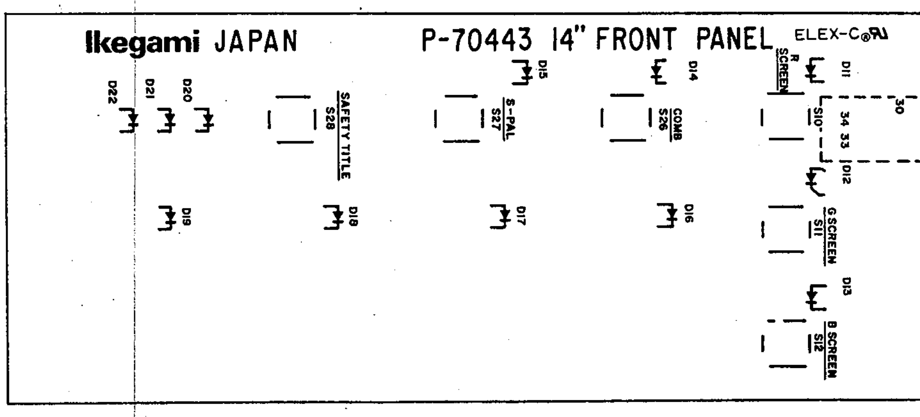


20/30 SERIES
20″ FRONT LEFT BOARD
PARTS LOCATION
P-70428

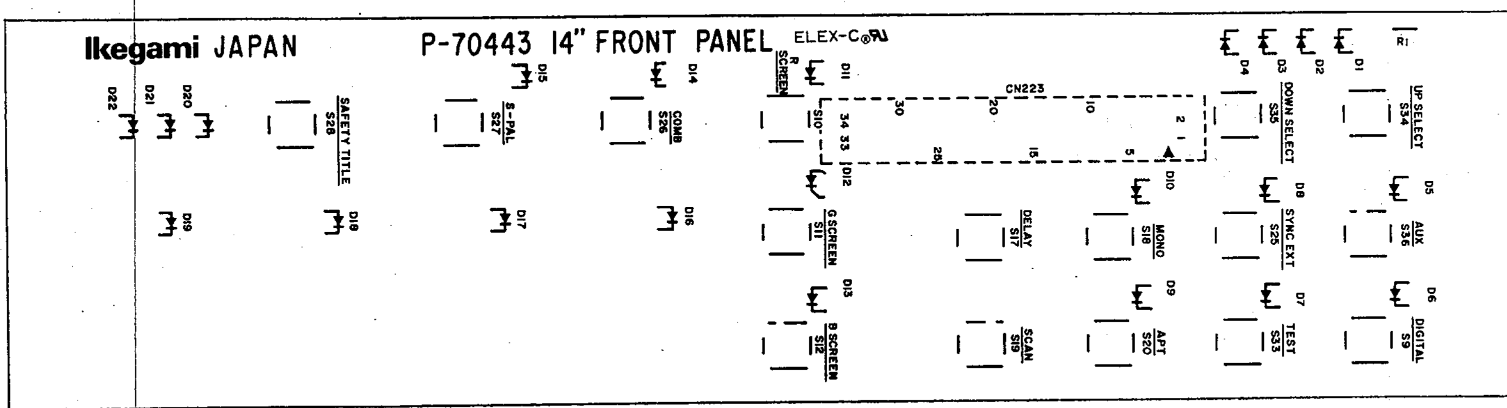


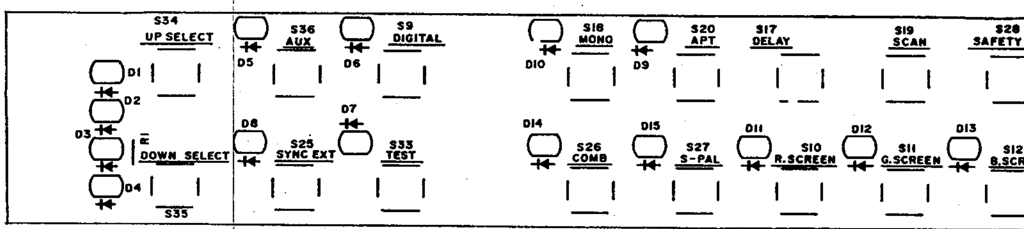
NOTE: 1. All resistors are in ohms 5%(parts marked F:1%), 1/4watt unless otherwise specified.
2. All capacitors are in farads, 300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

20/30 SERIES
COLOR MONITOR
20″ FRONT LEFT BOARD
Schematic Diagram
C4-904105A

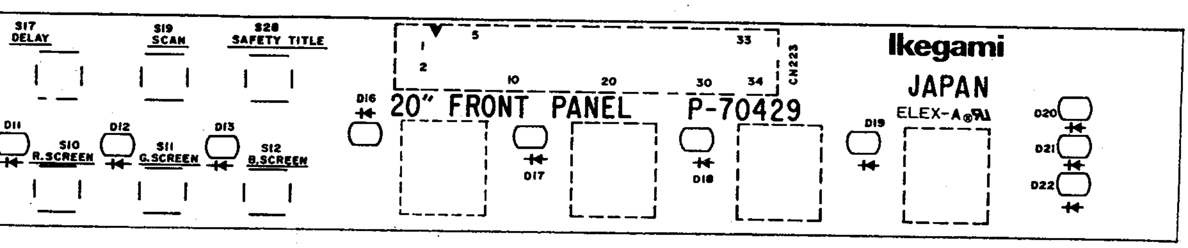


20/30 SERIES
14″ FRONT PANEL BOARD
PARTS LOCATION
P-70443


Ikegami JAPAN
P-70443 14" FRONT PANEL
ELEX-C
CN223
SAFETY TITLE S28
S-PAL S27
COMB S26
R SCREEN S10
G SCREEN S11
B SCREEN S12
DELAY S17
SCAN S19
MONO S18
APT S20
SYNC EXT S25
TEST S33
AUX S36
DIGITAL S9
DOWN SELECT S35
UP SELECT S34
R1
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D17
D18
D19
D20
D21
D22



20/30 SERIES
20″ FRONT PANEL BOARD
PARTS LOCATION
P-70429

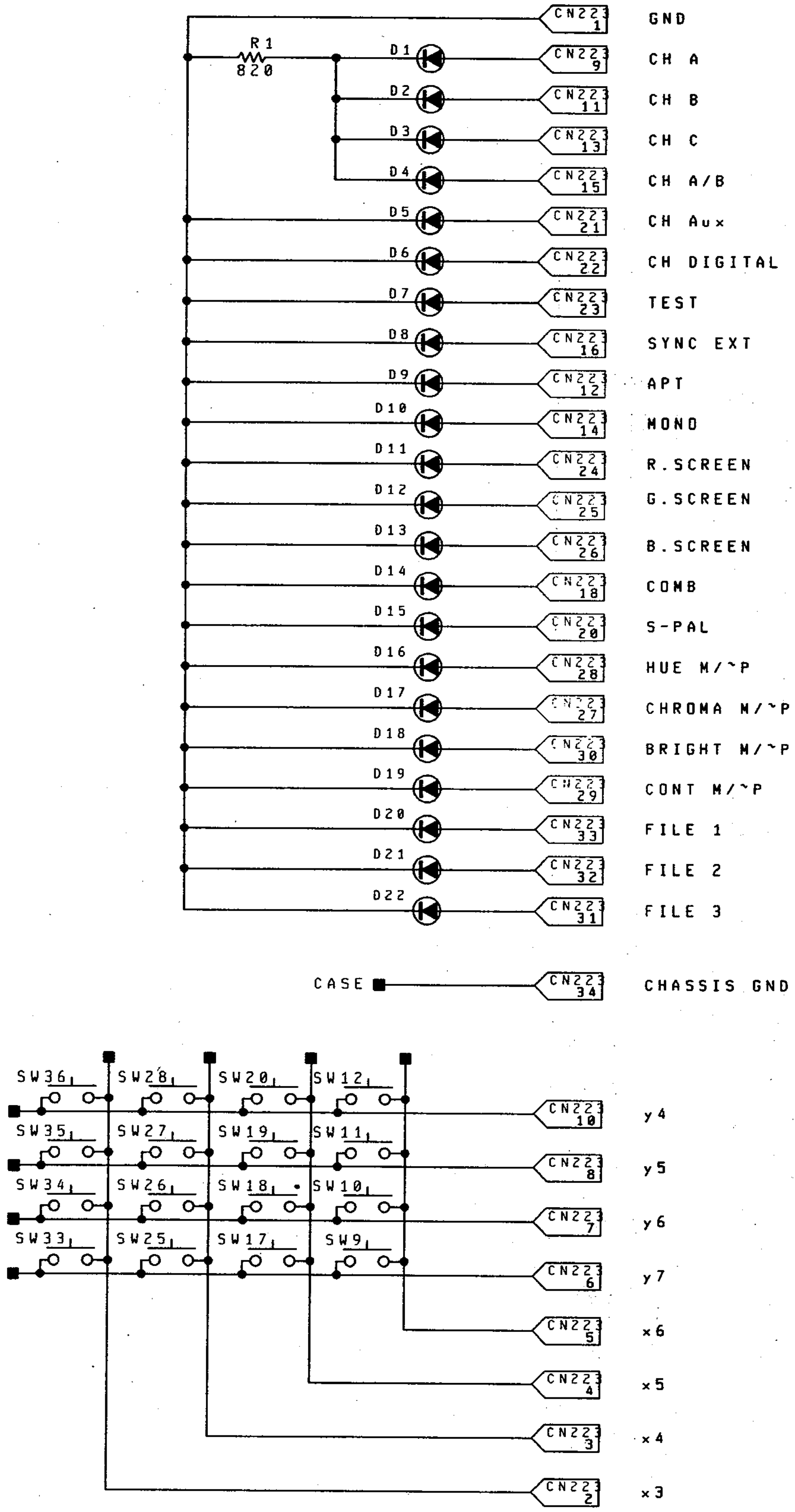


S17
DELAY
S19
SCAN
S28
SAFETY TITLE
D11
S10
R.SCREEN
D12
S11
G.SCREEN
D13
S12
B.SCREEN
D16
20" FRONT PANEL
P-70429
CN223
D17
D18
D19
Ikegami
JAPAN
ELEX-A
D20
D21
D22

D1 to D15 :TLG226

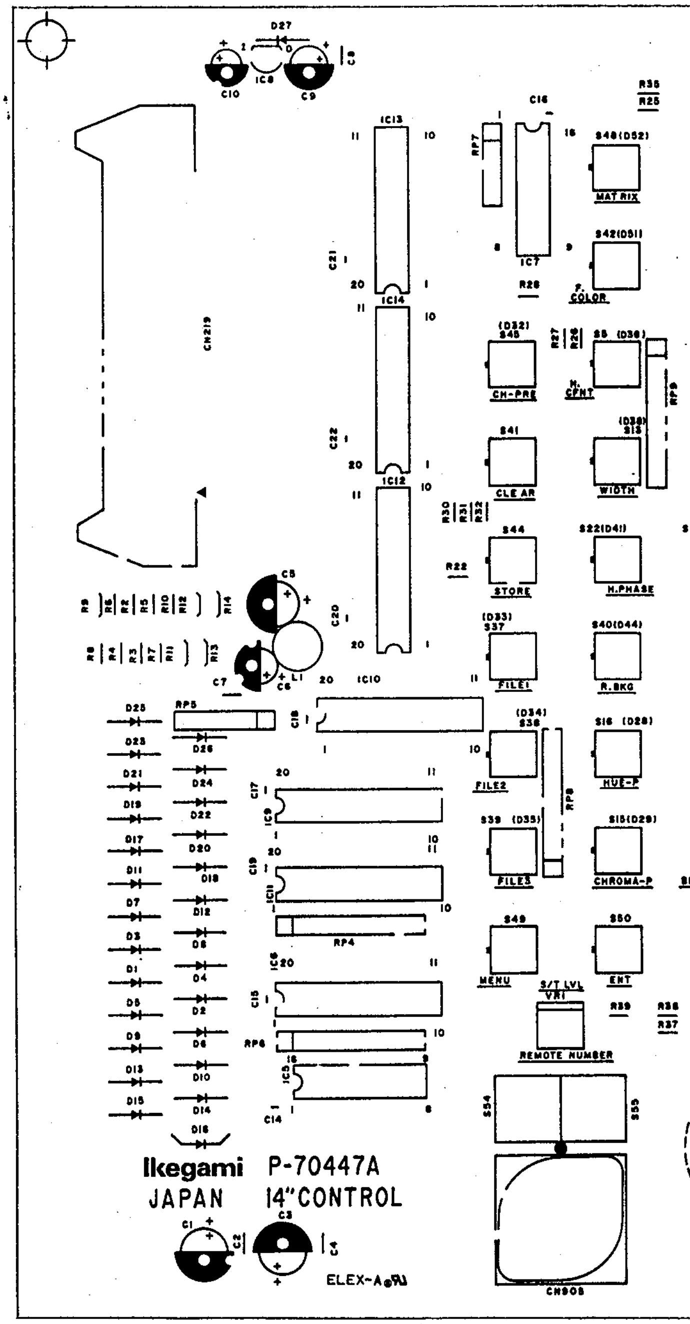
D20 to D22 :TLG226

D16 to D19 :TLY226

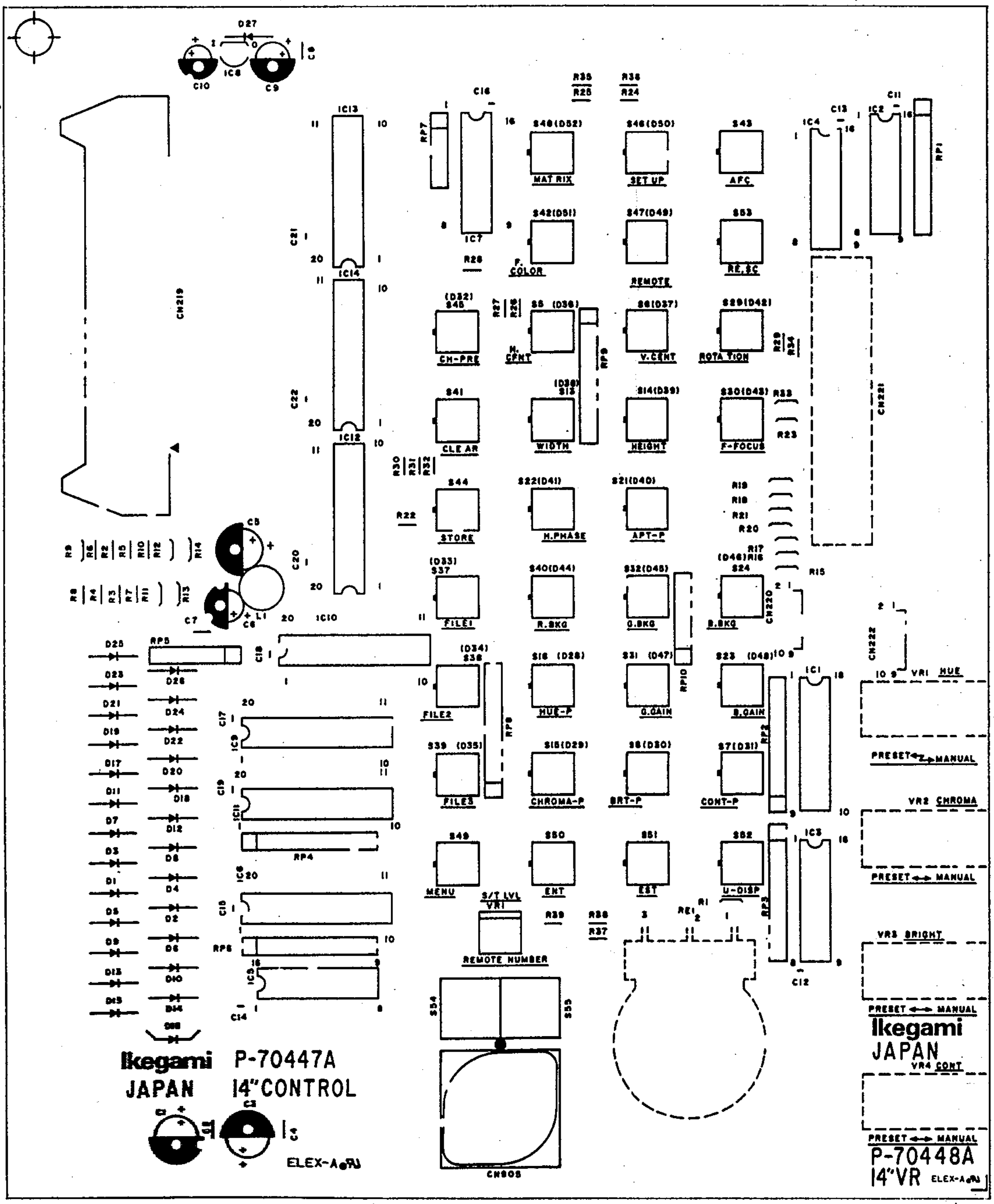


S9:DIGITAL
S10: R.SCREEN
S11: G.SCREEN
S12: B.SCREEN
S17: DELAY
S18: MONO
S19: SCAN
S20: APT
S25: SYNC EXT
S26: COMB
S27: S-PAL
S28: SAFETY TITLE
S33: TEST
S34: UP SELECT
S35: DOWN SELECT
S36: AUX

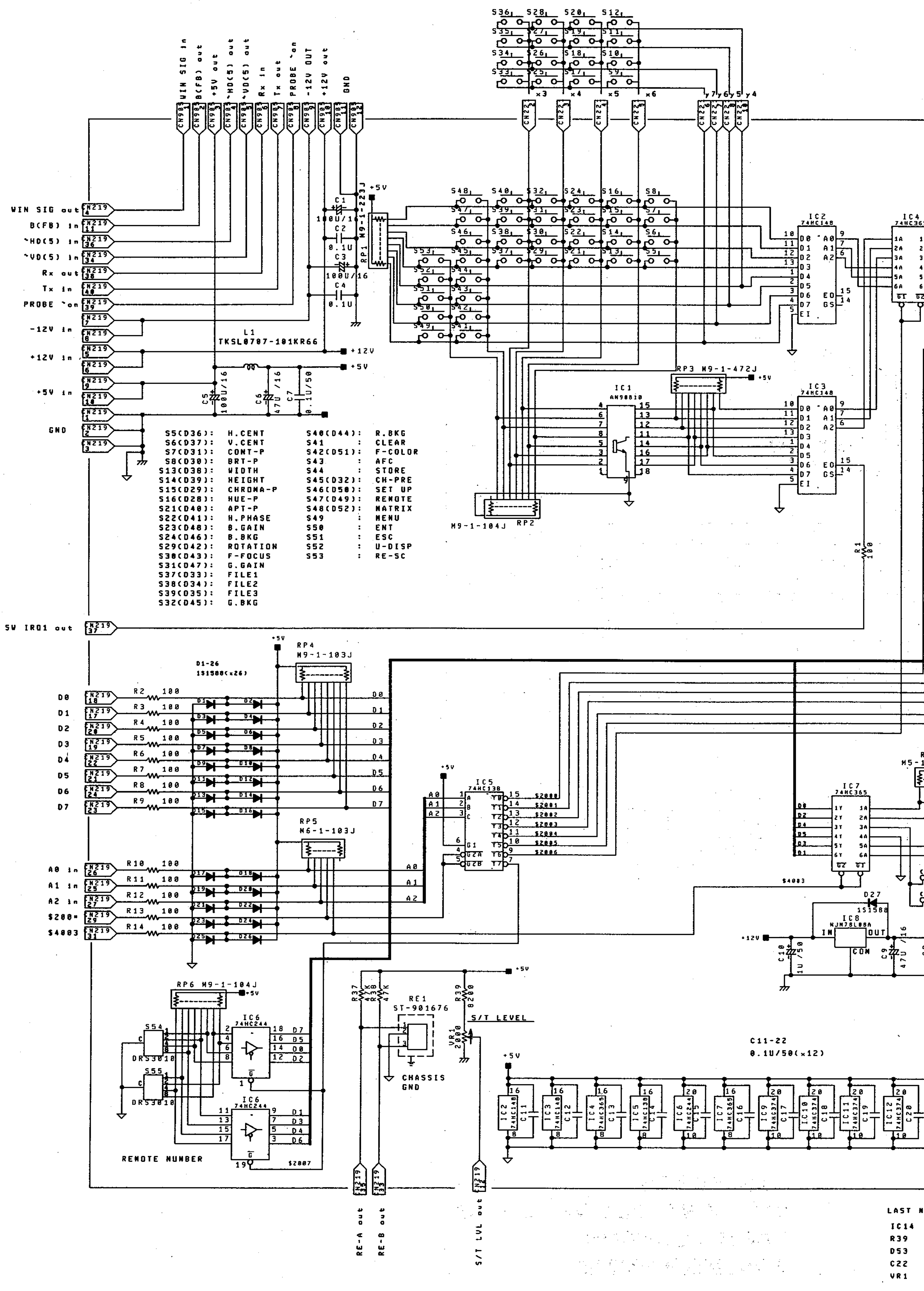
20/30 SERIES
COLOR MONITOR
14″ /20″
FRONT PANEL BOARD
Schematic Diagram
C4-904225



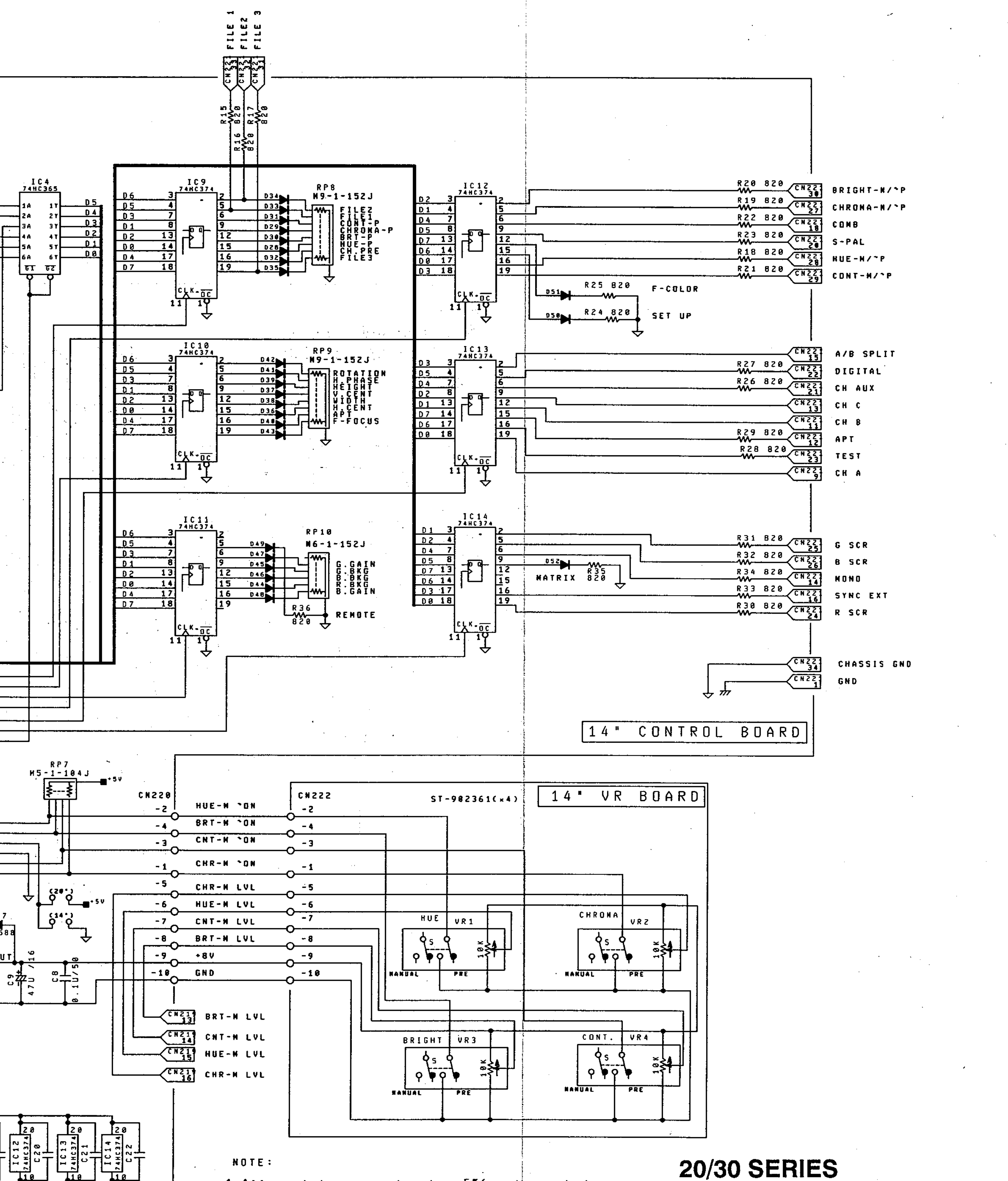
20/30 SERIES
14″ CONTROL & VR BOARDS
PARTS LOCATION
P-70447A/P-70448A



CN219
CN221
CN220
CN222
MATRIX
SET UP
AFC
F. COLOR
REMOTE
RE.SC
CH-PRE
H. CENT
V.CENT
ROTATION
CLEAR
WIDTH
HEIGHT
F-FOCUS
STORE
H.PHASE
APT-P
FILE1
R.BKG
G.BKG
B.BKG
FILE2
HUE-P
G.GAIN
B.GAIN
FILE3
CHROMA-P
BRT-P
CONT-P
MENU
ENT
EST
U-DISP
S/T LVL
VR1
REMOTE NUMBER
CN805
VR1 HUE
PRESET MANUAL
VR2 CHROMA
PRESET MANUAL
VR3 BRIGHT
PRESET MANUAL
Ikegami
JAPAN
VR4 CONT
PRESET MANUAL
P-70448A
14"VR
Ikegami P-70447A
JAPAN 14"CONTROL
ELEX-A



WIN SIG in
B(FB) out
+5V out
~HD(5) out
~VD(5) out
Rx in
Tx out
PROBE ~on
-12V OUT
+12V out
GND
WIN SIG out
B(FB) in
~HD(5) in
~VD(5) in
Rx out
Tx in
PROBE ~on
-12V in
+12V in
+5V in
GND
L1 TKSL0707-101KR66
+12V
+5V
C1 100U/16
C2 0.1U
C3 100U/16
C4 0.1U
C5 100U/16
C6 47U /16
C7 0.1U/50
RP1 M9-1-223J
RP2 M9-1-104J
RP3 M9-1-472J
IC1 AN9881S
IC2 74HC148
IC3 74HC148
IC4 74HC365
S5(D36): H.CENT
S6(D37): V.CENT
S7(D31): CONT-P
S8(D30): BRT-P
S13(D38): WIDTH
S14(D39): HEIGHT
S15(D29): CHROMA-P
S16(D28): HUE-P
S21(D40): APT-P
S22(D41): H.PHASE
S23(D48): B.GAIN
S24(D46): B.BKG
S29(D42): ROTATION
S30(D43): F-FOCUS
S31(D47): G.GAIN
S37(D33): FILE1
S38(D34): FILE2
S39(D35): FILE3
S32(D45): G.BKG
S40(D44): R.BKG
S41 : CLEAR
S42(D51): F-COLOR
S43 : AFC
S44 : STORE
S45(D32): CH-PRE
S46(D50): SET UP
S47(D49): REMOTE
S48(D52): MATRIX
S49 : MENU
S50 : ENT
S51 : ESC
S52 : U-DISP
S53 : RE-SC
SW IRQ1 out
R1 100
D1-26 1S1588(x26)
RP4 M9-1-103J
RP5 M6-1-103J
D0 D1 D2 D3 D4 D5 D6 D7
A0 in
A1 in
A2 in
$200*
$4003
IC5 74HC138
$2000 $2001 $2002 $2003 $2004 $2005 $2006
IC7 74HC365
D27 1S1588
IC8 NJM78L08A
C9 47U /16
C10 1U /50
RP6 M9-1-104J
S54 DRS3010
S55 DRS3010
IC6 74HC244
$2007
REMOTE NUMBER
R37 47K
R38 47K
RE1 ST-901676
CHASSIS GND
R39 8200
VR1 2000
S/T LEVEL
C11-22 0.1U/50(x12)
RE-A out
RE-B out
S/T LVL out
LAST N
IC14
R39
D53
C22
VR1



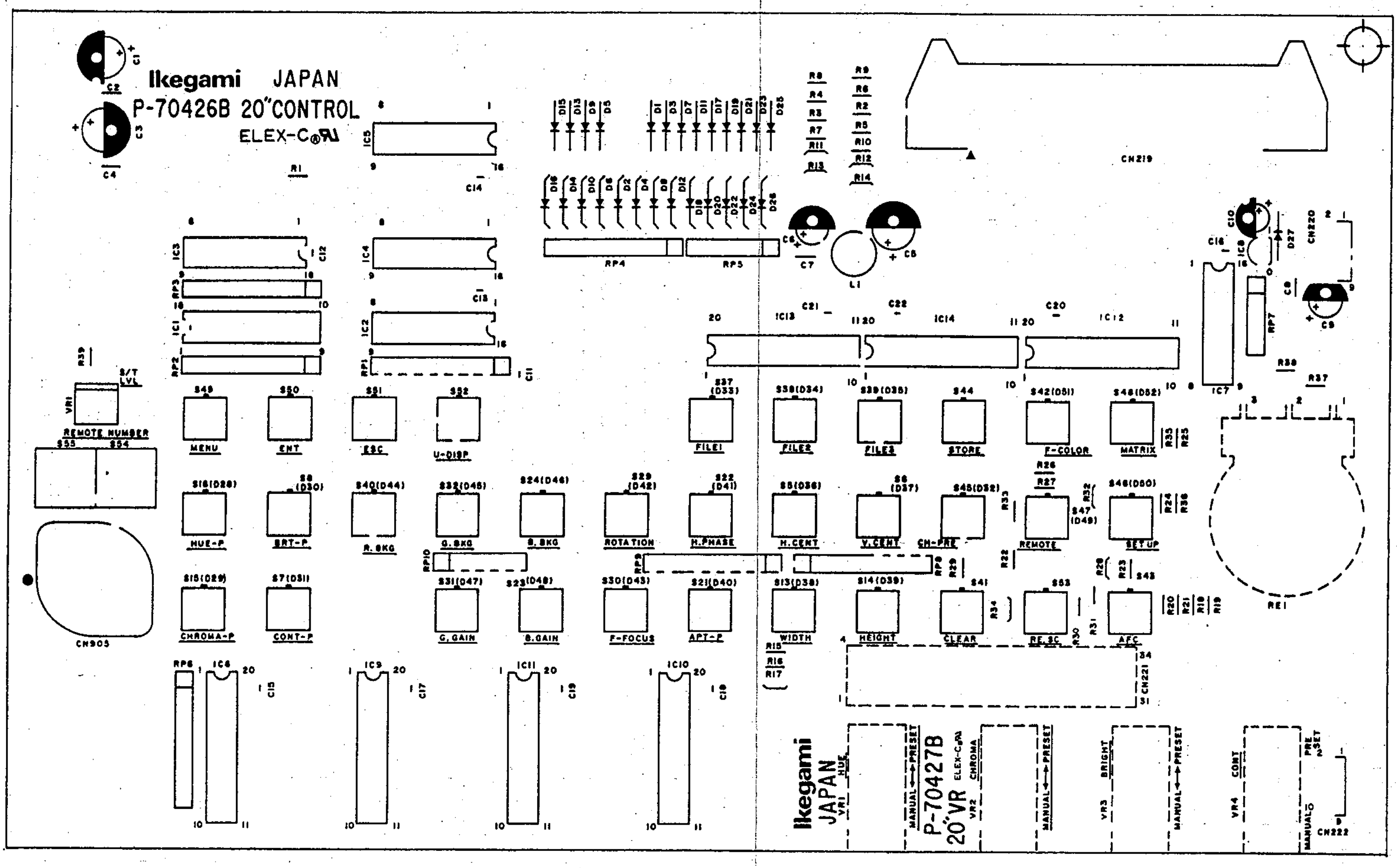
NOTE:

1. All resistors are in ohms 5%(parts marked F;1%), 1/4watt unless otherwise specified.
2. All capacitors are in farads.300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

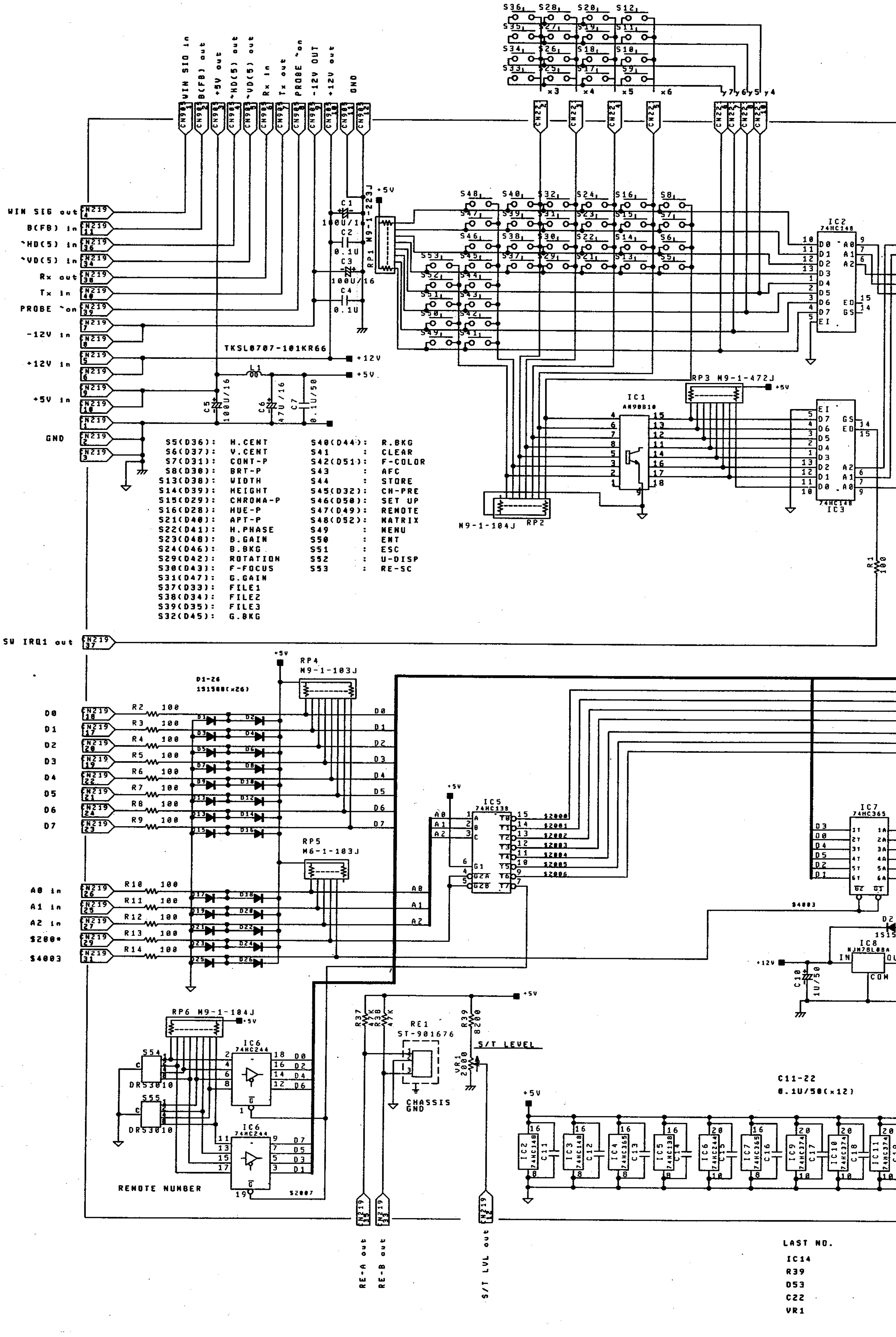
LAST NO.

IC14
R39
D53
C22
VR1

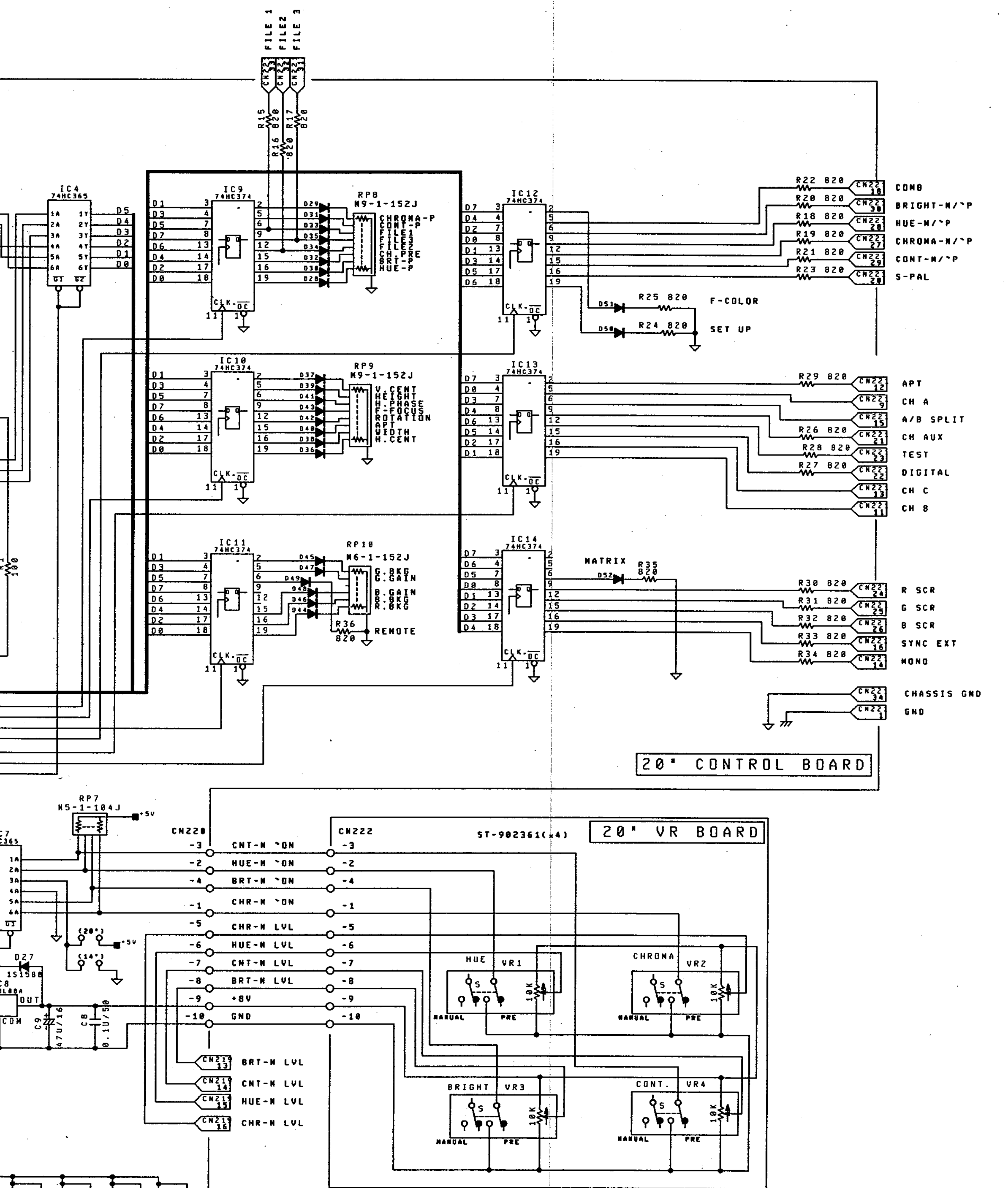
20/30 SERIES
COLOR MONITOR
14″ CONTROL BOARD
14″ VR BOARD
Schematic Diagram
C21-904262A

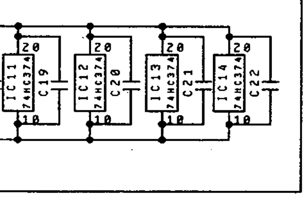


20/30 SERIES
20″ CONTROL & VR BOARDS
PARTS LOCATION
P-70426B/P-70427B



WIN SIG in
B(FB) out
+5V out
^HD(5) out
^VD(5) out
Rx in
Tx out
PROBE ^on
-12V OUT
+12V out
GND
WIN SIG out
B(FB) in
^HD(5) in
^VD(5) in
Rx out
Tx in
PROBE ^on
-12V in
+12V in
+5V in
GND
TKSL0707-101KR66
S5(D36): H.CENT
S6(D37): V.CENT
S7(D31): CONT-P
S8(D30): BRT-P
S13(D38): WIDTH
S14(D39): HEIGHT
S15(D29): CHROMA-P
S16(D28): HUE-P
S21(D40): APT-P
S22(D41): H.PHASE
S23(D48): B.GAIN
S24(D46): B.BKG
S29(D42): ROTATION
S30(D43): F-FOCUS
S31(D47): G.GAIN
S37(D33): FILE1
S38(D34): FILE2
S39(D35): FILE3
S32(D45): G.BKG
S40(D44): R.BKG
S41 : CLEAR
S42(D51): F-COLOR
S43 : AFC
S44 : STORE
S45(D32): CH-PRE
S46(D50): SET UP
S47(D49): REMOTE
S48(D52): MATRIX
S49 : MENU
S50 : ENT
S51 : ESC
S52 : U-DISP
S53 : RE-SC
IC1 AN90B10
IC2 74HC148
IC3 74HC148
RP1 N9-1-223J
RP2 N9-1-104J
RP3 N9-1-472J
SW IRQ1 out
D1-26 1SS80(x26)
RP4 N9-1-103J
RP5 M6-1-103J
D0
D1
D2
D3
D4
D5
D6
D7
A0 in
A1 in
A2 in
$200*
$4003
IC5 74HC138
IC7 74HC365
IC8 NJM78L08A
RP6 M9-1-104J
IC6 74HC244
DRS3010
REMOTE NUMBER
RE1 ST-901676
CHASSIS GND
S/T LEVEL
C11-22 0.1U/50(x12)
RE-A out
RE-B out
S/T LVL out
LAST NO.
IC14
R39
D53
C22
VR1





NOTE:

1. All resistors are in ohms 5%(parts marked F;1%), 1/4watt unless otherwise specified.
2. All capacitors are in farads,300V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

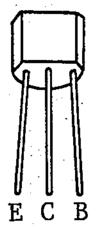
20/30 SERIES COLOR MONITOR 20″ CONTROL BOARD 20″ VR BOARD Schematic Diagram

C21-904185A

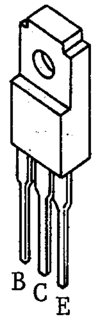
6. PARTS LIST

6-1. SEMICONDUCTORS PIN CONNECTION

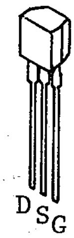
2SA1015Y
2SC1815Y



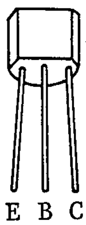
2SB1020
2SD1407Y
2SD1415



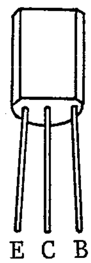
2SK192A-GR



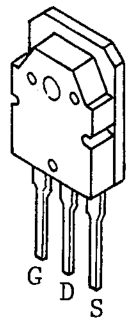
2SA1206
2SC2901
2N3904
2N3906



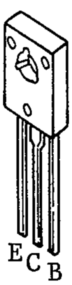
2SC2655Y



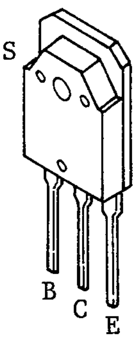
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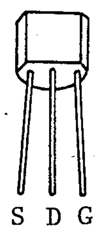
2SA1407E
2SB648AC
2SC2298B
2SC2752K
2SC3601E
2SD668AC
2SD669AC



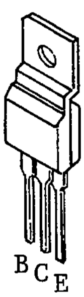
2SD1047E
2SD1064R or S



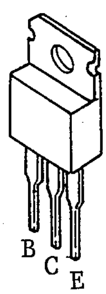
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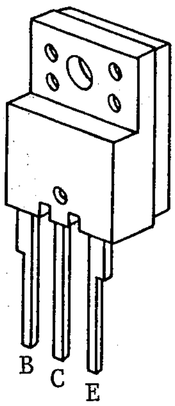
2SC1514



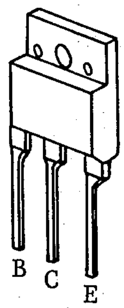
2SB861C
2SC2333K
2SD1138 C or D



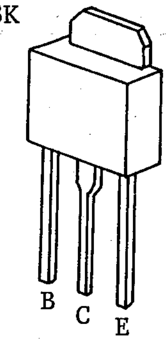
2SC4710



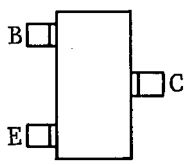
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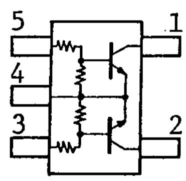
2SC3588K



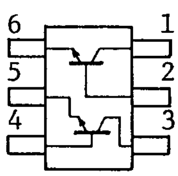
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2SA812-M6.7
2SA1461-Y24
2SC1623-L6.7
2SC3398
2SC3734-B24
2SC3735-B35



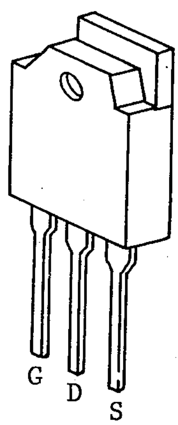
XN1212



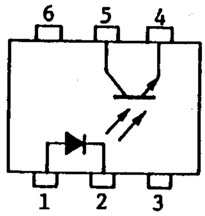
XN6501



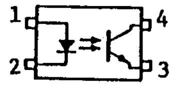
2SK787



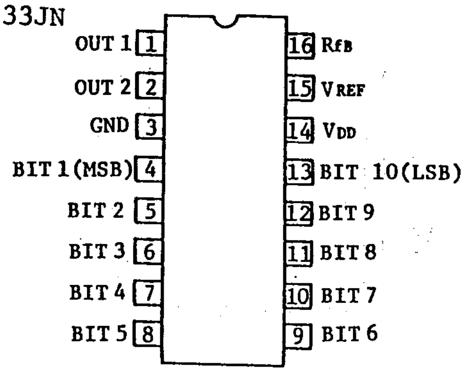
PS2652L or K



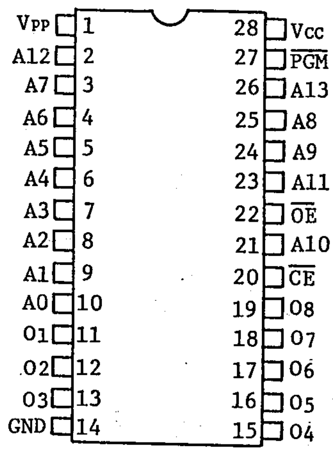
TLP521-1



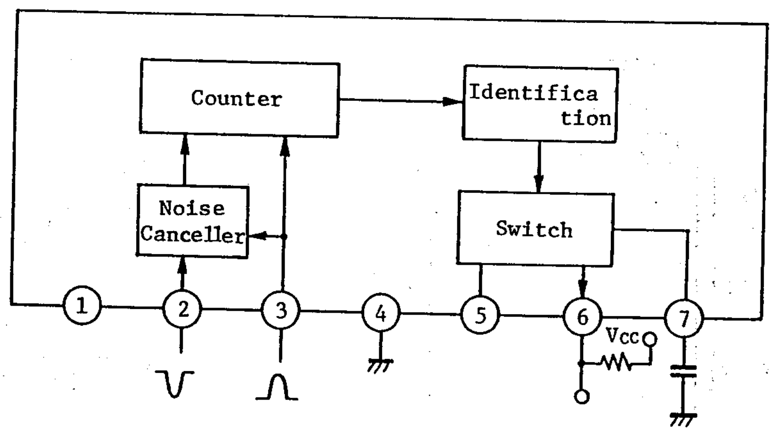
AD7533JN



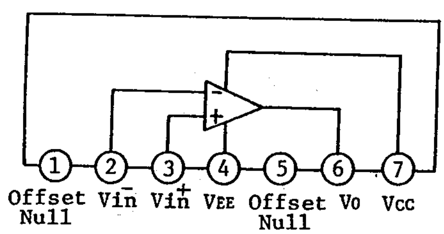
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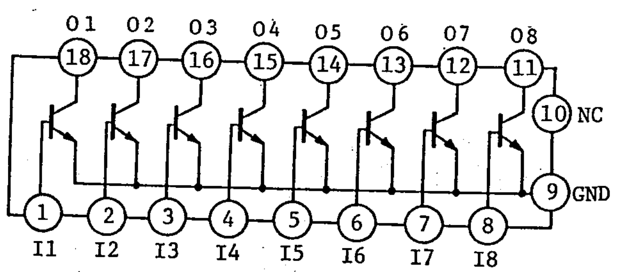
AN5560



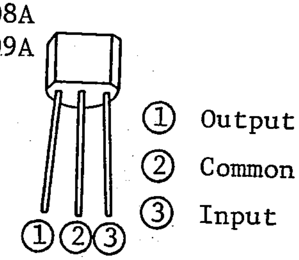
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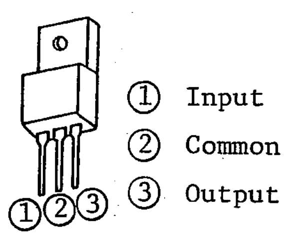
AN90B10



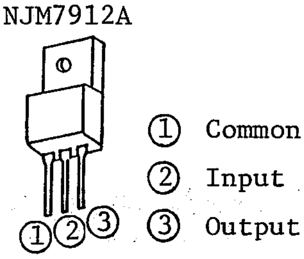
NJM78L05A
NJM78L08A
NJM78L09A



NJM7812A

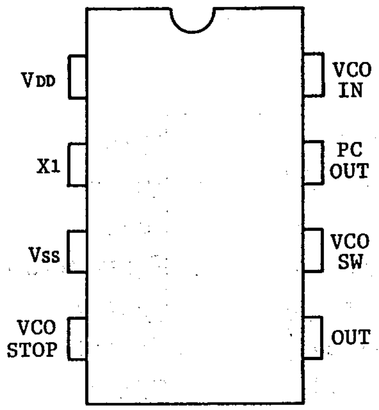


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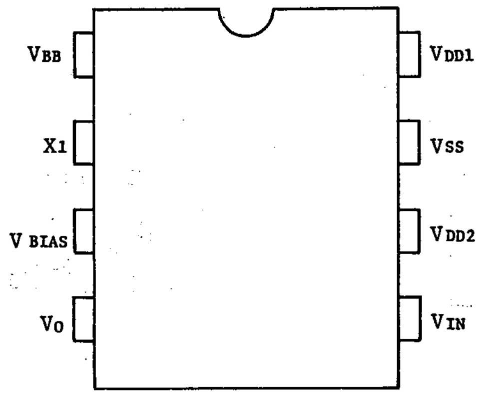


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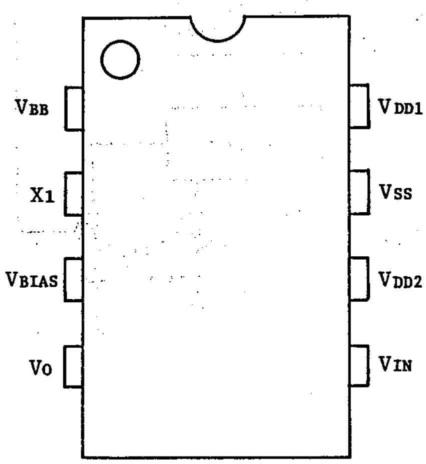
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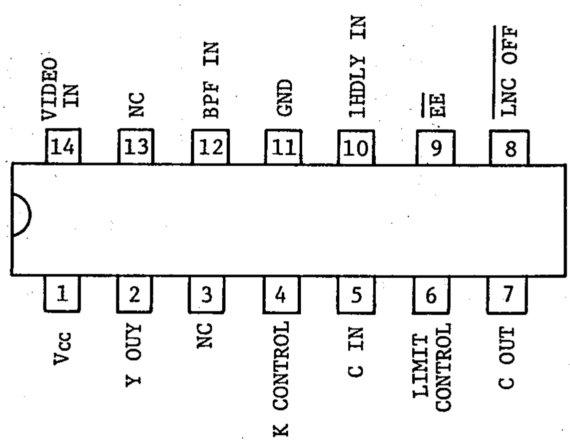
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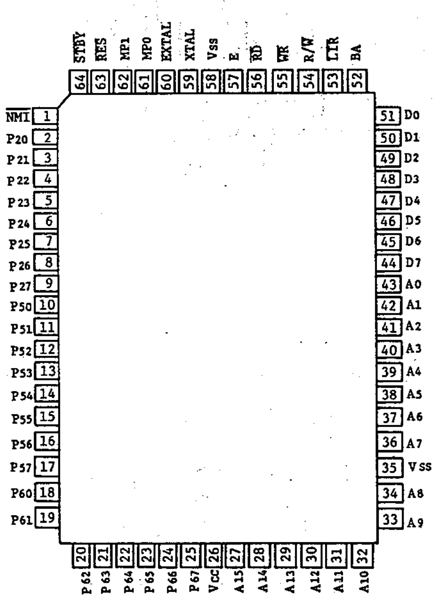
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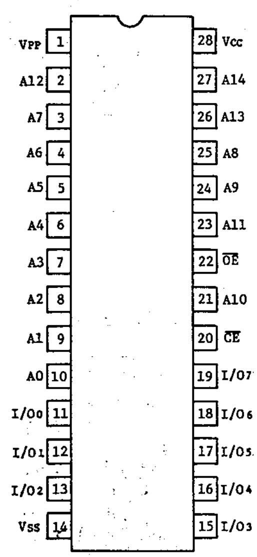
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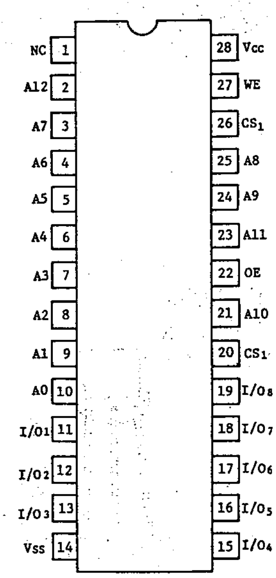
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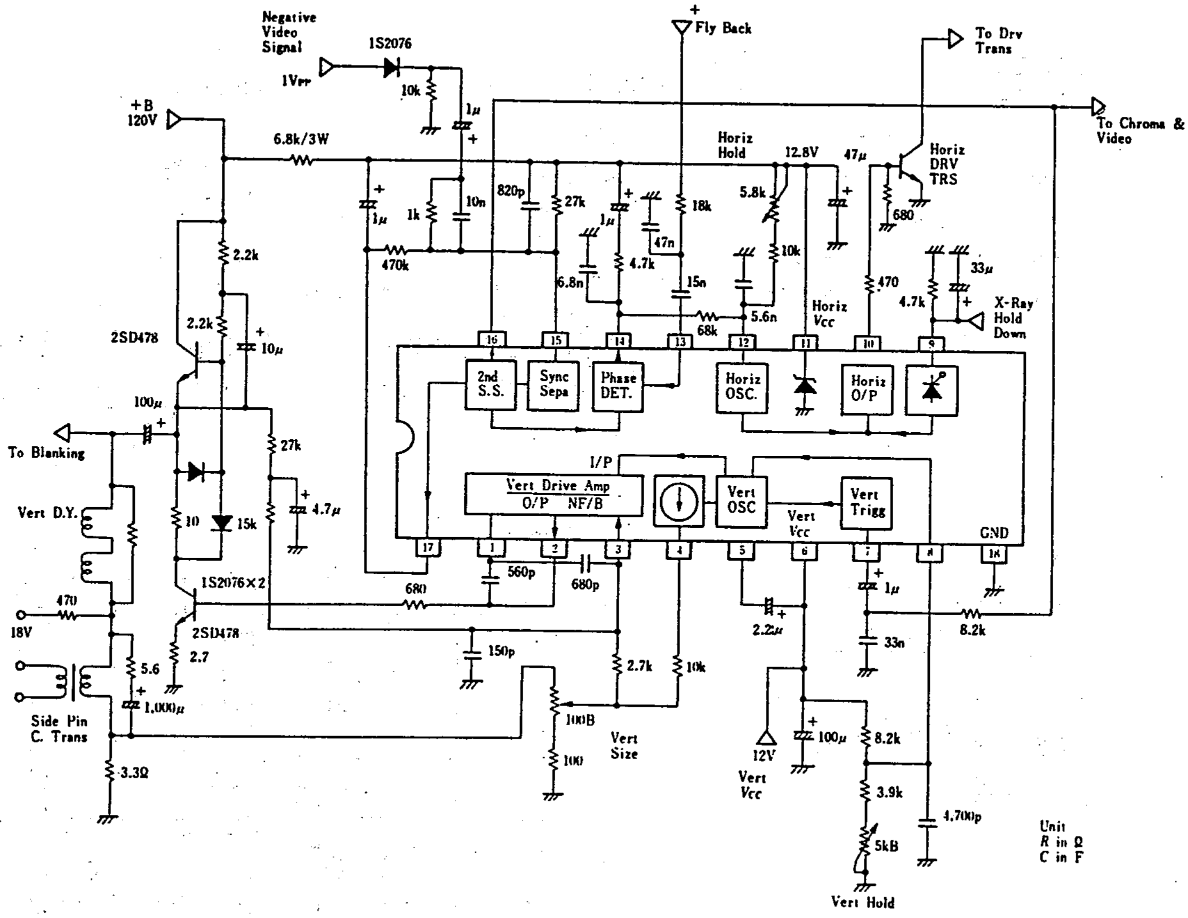


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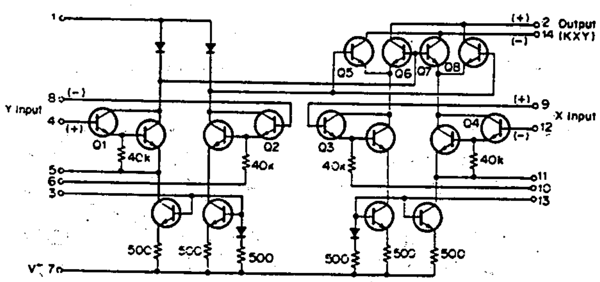


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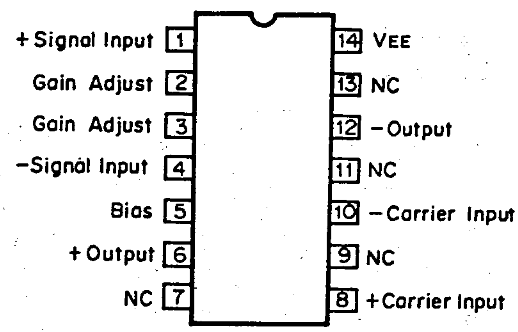
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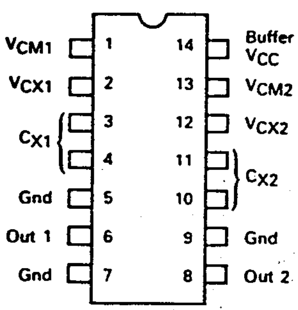
MC1495L
MC1495FR



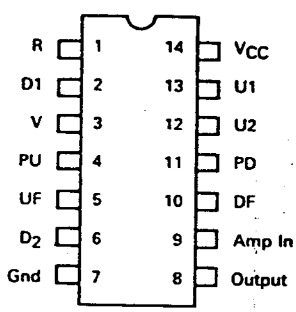
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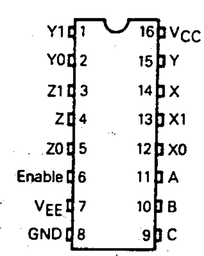
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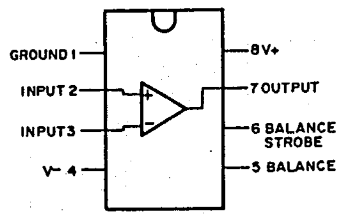
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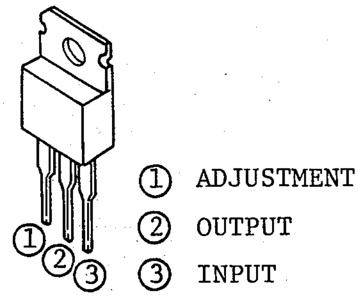
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TC4053BP
TC74HC 4053AF



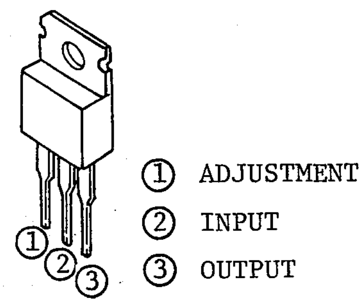
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LM311PS



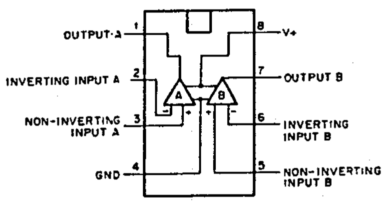
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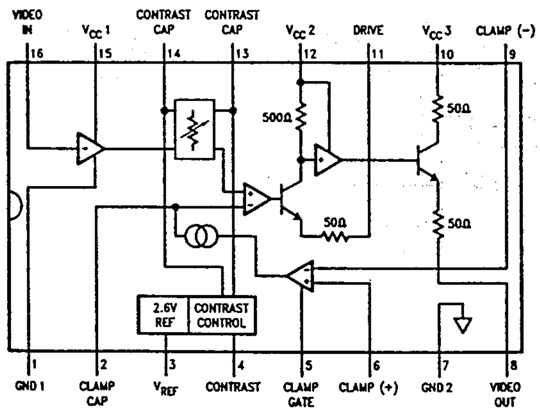
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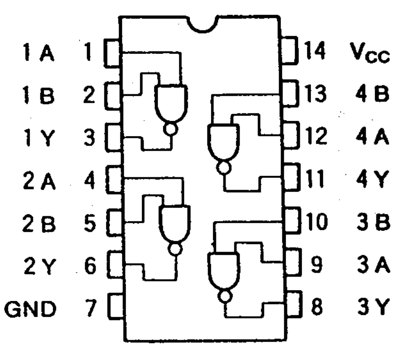
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μPC393G2



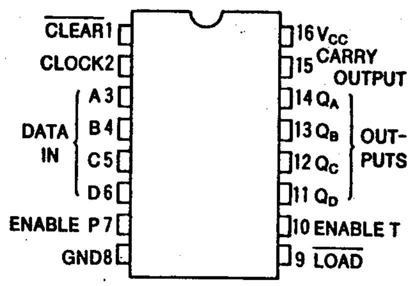
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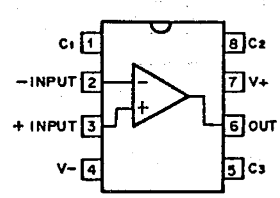
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TC74HC00AF



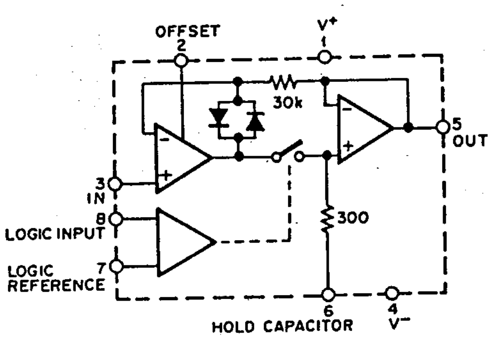
74ACT161SJ
TC74HC161AF



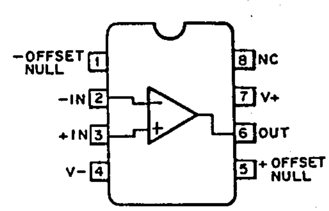
μPC318C



μPC398C

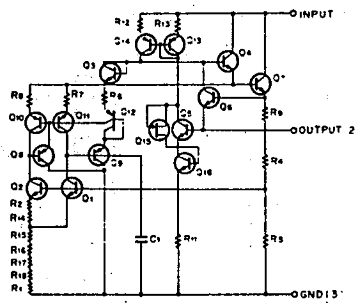


μPC741C

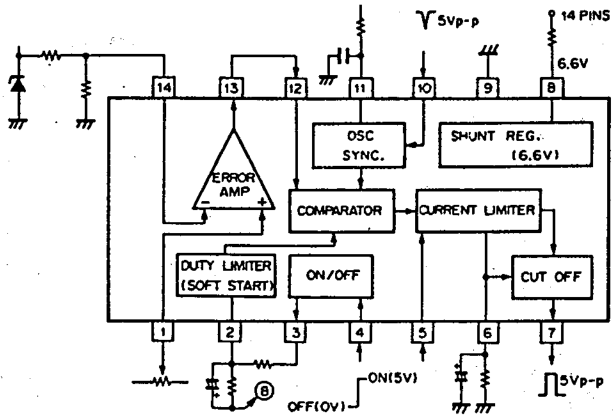


103

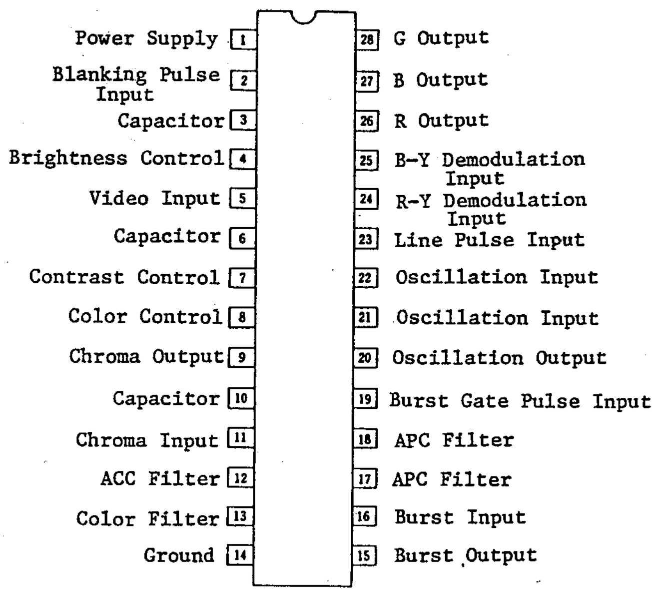
μPC1060C



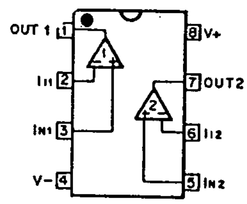
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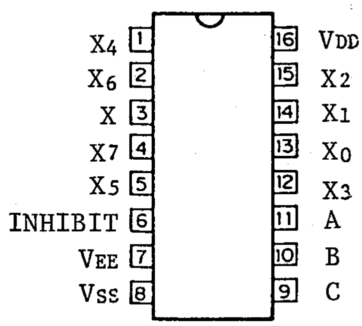
μPC1365C



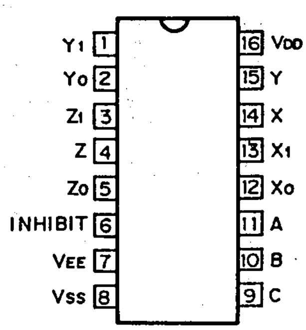
μPC4082C



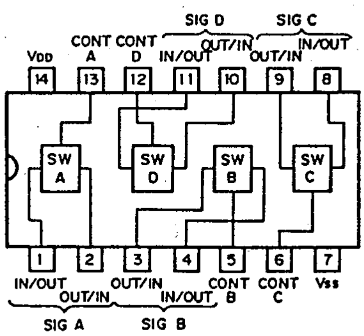
μPD4051BG



μPD4053BG

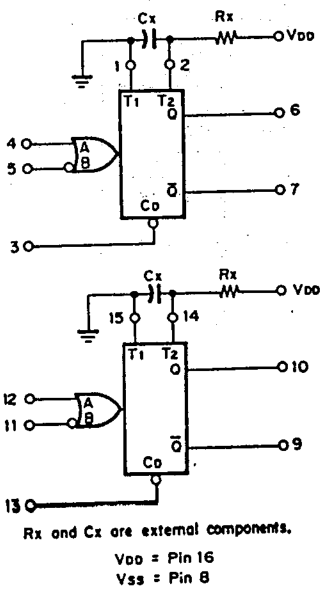


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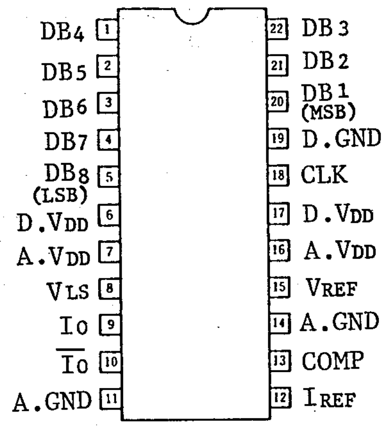


104

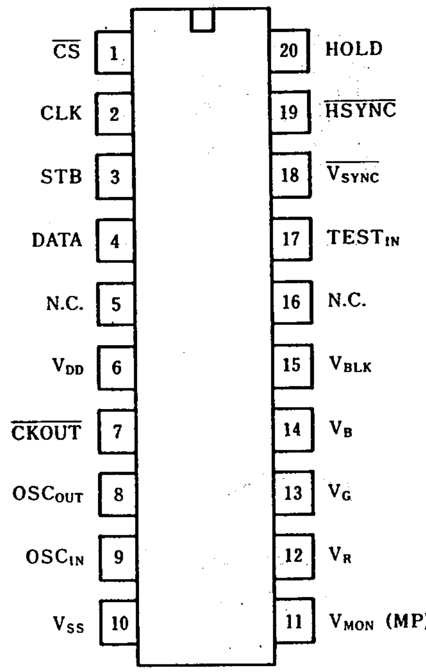
µPD4528BC



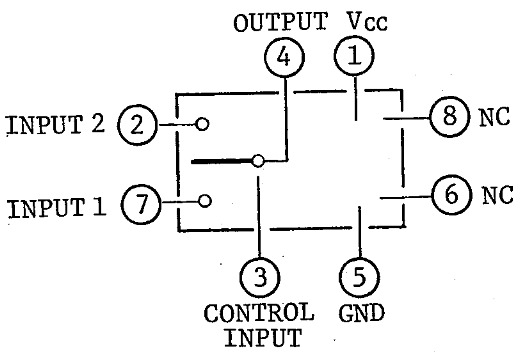
µPD6902C



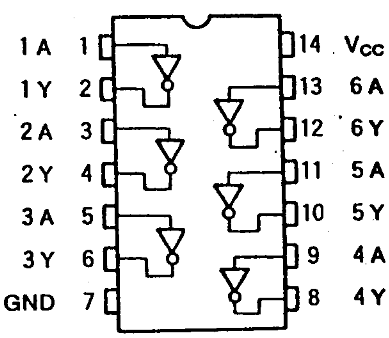
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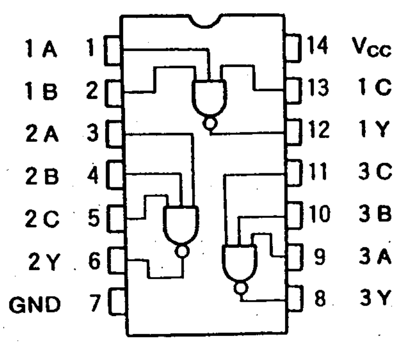
LA7016



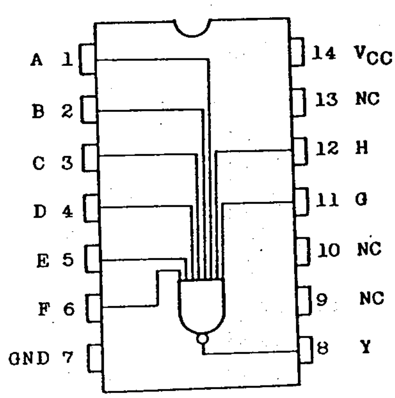
TC74HCU04AF
TC74HC04AF



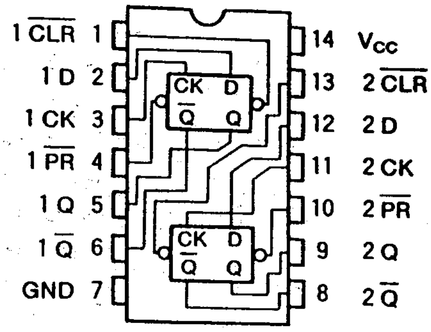
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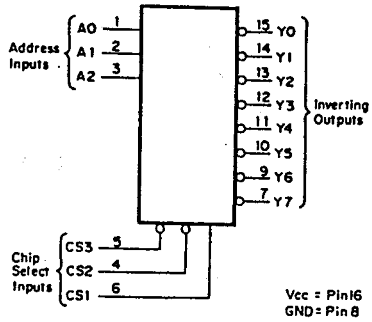
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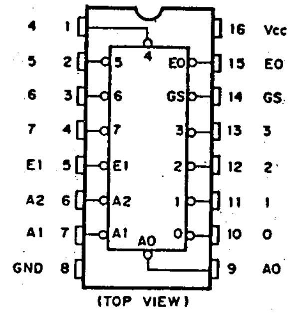
TC74HC74AF



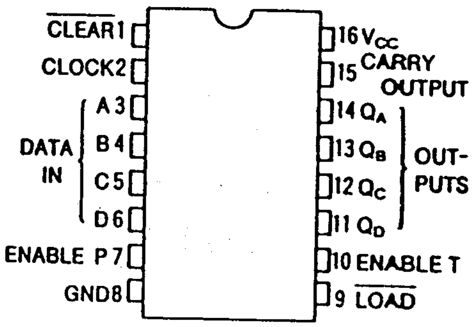
TC74HC138AF/AP



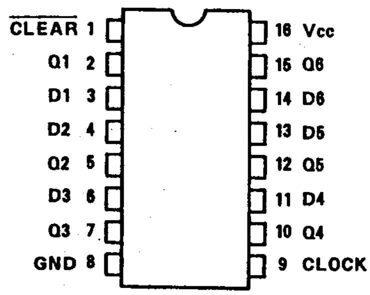
TC74HC148AP



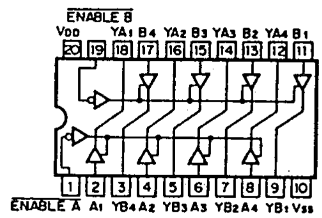
TC74HC163AF



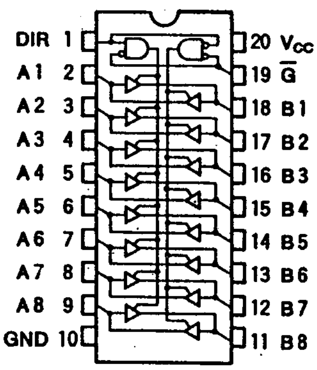
TC74HC174AF



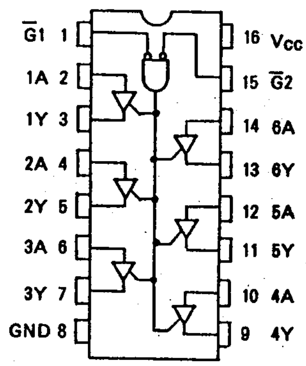
TC74HC244AF/AP



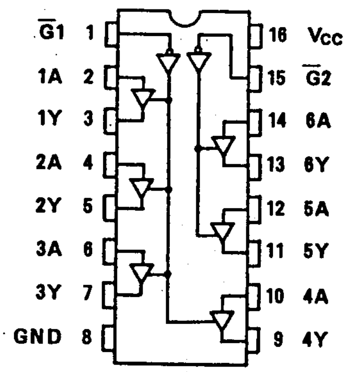
TC74HC245AF



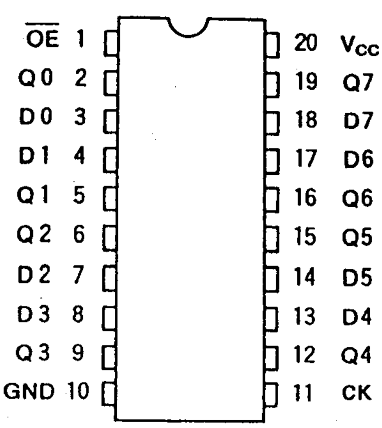
TC74HC365AP



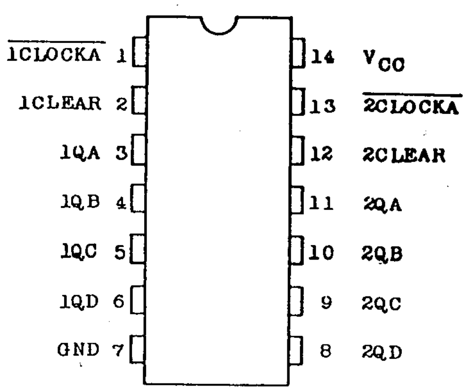
TC74HC367AF



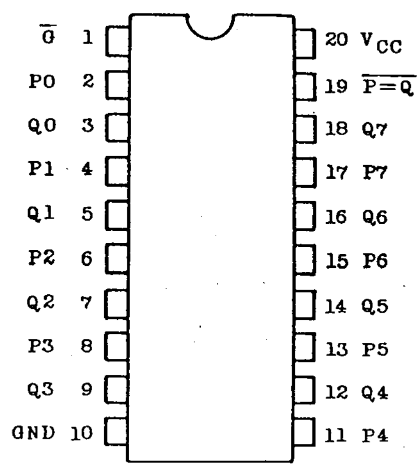
TC74HC374AF/AP



TC74HC393AF

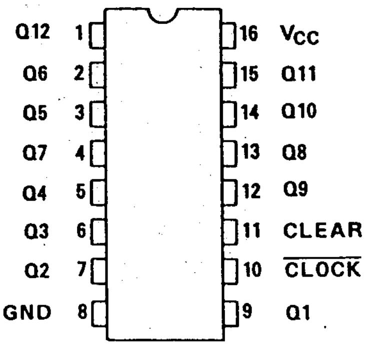


TC74HC688AF

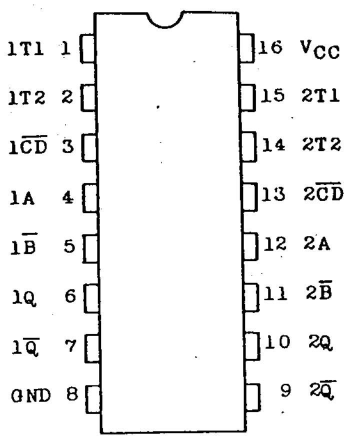


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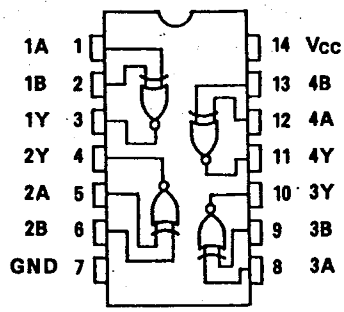
TC74HC4040AF



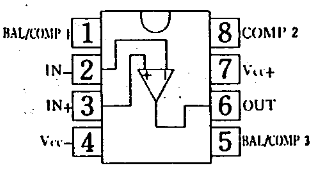
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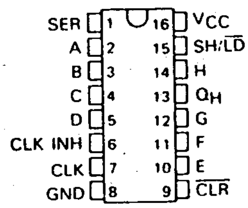
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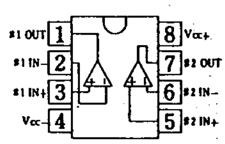
LM318PS



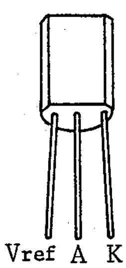
SN74HC166NS



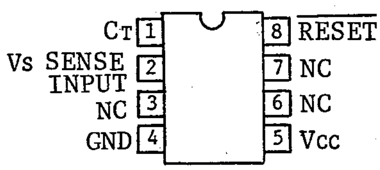
TL062CPS
TL082CPS



TL431CLPB



TL7700CPS



6-2. ELECTRIC PARTS LIST

(1) Guide for Reading the Parts List

The parts list for this color monitor consists of the following items.

Example :

(1) **VIDEO AMP BOARD**

(2) PARTS NO.	(3) DESCRIPTION	(4) MFD.
(5) < INTEGRATED CIRCUITS >		
IC101 (CMOS)	μ PD4053BC	NEC
IC102 (CMOS)	μ PD4528BC	NEC

(1) ………… Name of unit

(2) ………… Part No. shown in schematic diagram

(3) ………… Type designation of parts

(4) ………… Company name (refer to the next page.)

(5) ………… Part name

Note

1. When touching the following parts, pay special attention.
   CMOS IC, delay line, X´tal oscillator, transformer
2. Parts marked with ※ are for adjustment use.
3. Asterisked parts are parts having important factors against X－ray radiation.
4. All the parts may be subject to change for further improvement.

(2) Manufacture Code

AGT	AUGAT INC.	U.S.A.
ALP	ALPS ELECTRIC CO.,LTD.	Japan
AMP	AMP, Ltd.	Japan
ANA	Analog Devices,Inc.	U.S.A.
ASA	ASAHI ELECTRONICS INC.	Japan
BEC	Beckman Industrial	U.S.A.
COS	TOKYO COSMOS ELECTRIC CO.,LTD.	Japan
CPL	COPAL ELECTRONICS CO.,LTD.	Japan
DDK	DAI-ICHI DENSHI KOGYO K.K.	Japan
DIT	DONG IL TECHNOLOGY LTD.	Korea
ELC	Elco International K.K.	Japan
EMD	EMUDEN MUSEN KOGYO CO.,LTD.	Japan
FDK	Fuji Electrochemical Co.,Ltd.	Japan
FJE	Fuji Electric Co.,Ltd.	Japan
FJS	Fujisoku Electric Co.,Ltd.	Japan
FJT	FUJITSU LIMITED	Japan
FKD	Fukuda S.S	Japan
FKK	Fujimoto Kinzoku Co.,Ltd.	Japan
FOS	FOSTER ELECTRIC CO.,LTD.	Japan
HDK	HOKURIKU ELECTRIC INDUSTRY CO.,LTD.	Japan
HIM	HEINEMANN ELECTRIC COMPANY	U.S.A.
HIR	HIROSE ELECTRIC CO.,LTD.	Japan
HIT	Hitachi,Ltd.	Japan
HOS	Hosiden Electronics Co.,Ltd.	Japan
HRA	HIRAKAWA ELECTRIC WIRE MFG.CO.,LTD.	Japan
HRN	HARUNA DENSHI co.,ltd.	Japan
IKE	Ikegami Tsushinki Co.,Ltd.	Japan
ISI	Ishizuka Electronics Corporation	Japan
IWT	IWATSU SEIMITSU CO.,LTD.	Japan
JAE	JAPAN AVIATION ELECTRONICS IND.LTD	Japan
JFC	JAPAN FINE CHEMICAL CORP.	Japan
KCK	KCK CO.,LTD.	Japan
KDK	KAWASAKI ELECTRIC WIRE CO.,LTD.	Japan
KEL	KEL CORPORATION	Japan
KIN	KINSEKI,LIMITED	Japan
KMY	KAMAYA ELECTRIC CO.,LTD.	Japan
KOA	KOA CORPORATION	Japan
KYC	KYOCERA CORPORATION	Japan
LTL	LITTELFUSE	U.S.A.
MAC	MAC EIGHT Co.,Ltd.	Japan
MAR	MARCON ELECTRONICS CO.,LTD.	Japan
MAT	Matsushita Electric Industrial Co.,Ltd.	Japan
MIZ	MIZUTANI ELECTRIC IND.CO.,LTD.	Japan
MMD	MORIMATSU CO.,LTD.	Japan
MMM	SUMITOMO 3M CO.LTD	Japan
MOT	MOTROLA INC	U.S.A.
MUR	MURATA MFG.CO.,LTD.	Japan
NAT	JAPAN SOLDERLESS TERMINAL MFG. CO.,LTD.	Japan
NBL	NOBLE MUSEN CO.,LTD.	Japan
NCC	MATSUO ELECTRIC CO.,LTD.	Japan
NCH	NIPPON CHEMI-CON CORPORATION	Japan
NEC	NEC Corporation	Japan
NHK	NIHON HODEN KENKYUSHO	Japan
NKA	NIHON KAIHEIKI IND.CO.,LTD.	Japan
NKM	NIKKOHM CO.,LTD.	Japan
NMO	Nihon Molex	Japan
NOB	TEIKOKU TSUSHIN KOGYO CO.,LTD.	Japan
NSC	National Semiconductor Corporation	U.S.A.
OEL	OSHINO ELECTRIC LAMP WORKS,LTD.	Japan
OKA	OKAYA ELECTRIC INDUSTRIES CO.,LTD.	Japan
OMR	OMRON Corporation	Japan
PRM	PRECI-DIP S.A.	Swiss
QQQ	CHUOMUSEN CO.,LTD.	Japan
RYO	Ryosan Company,Limited	Japan
SAT	SATO PARTS CO.,LTD.	Japan
SCH	SCHURTER	Swiss
SCS	SAITO CORD MFG.CO.,LTD.	Japan
SIN	SHINYEI KAISHA	Japan
SKK	Sinetsu Kagaku Kogyo Co.,Ltd.	Japan
SKN	SANKEN ELECTRIC CO.,LTD.	Japan
SKO	Sankosha	Japan

SMK	SMK Corporation	Japan
SON	Sony Corporation.	Japan
SOS	SOSHIN ELECTRIC CO.,LTD.	Japan
SRP	Sharp Corporation	Japan
SSM	SUSUMU CO.,LTD.	Japan
STL	STANLEY ELECTRIC CO.,LTD.	Japan
SUD	SUMIDA ELECTRIC CO.,LTD.	Japan
SWC	SHOWA ELECTRIC WIRE & CABLE CO.,LTD.	Japan
SYO	SANYO ELECTRIC CO.,LTD.	Japan
TAD	TAIKC DENKI CO.,LTD.	Japan
TAJ	TAJIMI ELECTRONICS CO.,LTD.	Japan
TAM	TAMA ELECTRIC Co.,Ltd.	Japan
TDK	TDK Corporation	Japan
TEL	TODAI ELECTRIC LTD.	Japan
TEX	TEXAS INSTRUMENTS	U.S.A.
TKO	TOKO,INC.	Japan
TND	TANAKA ELECTRONICS IND.CO.,LTD.	Japan
TOK	TOKAI COMMUNICATION INDUSTRY CO.,LTD.	Japan
TOS	TOSHIBA CORPORATION.	Japan
TYO	TAIYO TSUSHIN KOGYO K.K.	Japan
YTD	YAMATE ELECTRIC CO.,LTD.	Japan

(3) Parts List

20/30SERIES MAIN CHASSIS

No.	DESCRIPTION	MFD.	PARTS – CODE
<CRT>			
V901△★	~ TM14-20RH/RP ~		
	M34JFS01X/C18 (USA)	MAT	72110-01810
	M34JFS01X/H18 (JPN)	MAT	72110-01710
	M34JFS01X/E18 (EUR)	MAT	72110-01910
	~ TM20-20RH/RP ~		
	M48JBY02X/C28 (USA)	MAT	72110-02110
	M48JBY02X/H28 (JPN)	MAT	72110-02010
	M48JBY02X/E28 (EUR)	MAT	72110-02240
	~ TM20-30RH/RP ~		
	M48KTU102X/C10 (USA)	MAT	72110-03320
	M48KTU102X/H10 (JPN)	MAT	72110-03300
	M48KTU102X/E10 (EUR)	MAT	72110-03310
<TRANSFORMER>			
T901	ST-901692 (only 20SERIES)	IKE	57995-16920
T903	ST-902354 (30SERIES) (only 30SERIES)	IKE	57995-23540
<COILS>			
L902	ST-901928 (14")	IKE	40985-19280
	ST-901929 (20")	IKE	40985-19290
L903	ST-901405 (14")	IKE	40985-14050
	ST-901402B (20")	IKE	40985-14022
<SWITCH>			
S901△	EST-15 702V	MAT	36007-00300
<CONNECTORS>			
CN901△	350779-1	AMP	30501-01200
CN902	DF1-2S-2.5R24	HIR	30079-00250
	DF1-2A1.33	HIR	30079-00290
CN920△	350766-1	AMP	30501-00950
CN921△	350777-1	AMP	30501-01000
CN922	60-9021-3024-10-000 (only 20")	ELC	30508-00900
CN923	60-9021-3024-10-000 (only 20")	ELC	30508-00900
CN925△	SUP-D3G-E	OKA	43548-00400
CN926△	350779-1	AMP	30501-01200
CN927	350780-1	AMP	30501-01400
CN928	1951R (only 20SERIES)	NMO	30561-00200
	1381-TL (only 20SERIES)	NMO	30562-00200
CN931	TS-80H-04-A1 (only 20SERIES)	TAD	30423-00380
<CABLE ASS'IES>			
CA901	ST-902380 (CONNECTOR-MOTHER)	IKE	66995-23800
CA902	ST-902394 (14")	IKE	66995-23940
	ST-902382 (20") (MOTHER-CONTROL)	IKE	66995-23820
CA903	ST-902383 (MOTHER-RGB OUT)	IKE	66995-23830
CA904	ST-902384 (MOTHER-DEF)	IKE	66995-23840
CA905	ST-902386 (MOTHER-POWER)	IKE	66995-23860
CA906	ST-902388 (POWER-DEF)	IKE	66995-23880
CA913	ST-902389 (DEF-FRONT LEFT)	IKE	66995-23890
<FUSE>			
F901△	EAK4A (EUR)	LTL	53002-00500
	ASG3-4 (JPN,USA)	FKD	53008-00400
<FUSE HOLDER>			
F901△	FEU031-1673	SCH	53505-00100
<FUSE CAP>			
F901△	FEK031-1663 (EUR)	SCH	53504-00200
	FEK031-1661 (JPN,USA)	SCH	53504-00100
<FASTEN RECEPTACLES>			
TB907	170043-2	AMP	30560-00030
TB908	170046-2	AMP	30560-00060
<CABLE CLAMP>			
	NO.3484-1000 (×5)	MMM	

20/30SERIES MOTHER BOARD

No.	DESCRIPTION	MFD.	PARTS – CODE
<INTEGRATED CIRCUITS>			
IC1	LM317T	NSC	01332-00301
IC2	LM337T	NSC	01332-00650
IC3	LM317T	NSC	01332-00301
<DIODES>			
D1	V06C	HIT	03631-00200
D2	V06C	HIT	03631-00200
D3	V06C	HIT	03631-00200
D4	V06C	HIT	03631-00200
D5	V06C	HIT	03631-00200
D6	V06C	HIT	03631-00200
<VARIABLE RESISTORS>			
VR1	GF06UT2 500Ω	COS	15194-50111
VR2	GF06UT2 500Ω	COS	15194-50111
VR3	GF06UT2 500Ω	COS	15194-50111
<RESISTORS>			
R1	RN26C2E 240Ω F	KOA	10355-24111
R2	RN26C2E 1800Ω F	KOA	10355-18211
R3	RN26C2E 750Ω F	KOA	10355-75111
R4	RN26C2E 120Ω F	KOA	10355-12111
R5	RN26C2E 240Ω F	KOA	10355-24111
R6	RN26C2E 470Ω F	KOA	10355-47111
<CAPACITORS>			
C1	ECQ-V1H 104JZ2	MAT	22137-10450
C2	ECEA 1JU 100B	MAT	20123-10663
C3	ECEA 1EU 221B	MAT	20123-22725
C4	ECQ-V1H 104JZ2	MAT	22137-10450
C5	ECEA 1JU 100B	MAT	20123-10663
C6	ECEA 1EU 221B	MAT	20123-22725
C7	ECQ-V1H 104JZ2	MAT	22137-10450
C8	ECEA 1JU 100B	MAT	20123-10663
C9	ECEA 1EU 221B	MAT	20123-22725
<CONNECTORS>			
CN208	H1F3BA-34PA-2.54DSA	HIR	30164-05701
CN209	H1F3F-40PA-2.54DS	HIR	
CN210	H1F3FC-20PA-2.54DSA	HIR	
CN211	H1F3F-26PA-2.54DS	HIR	30164-07260
CN212	DF1-7P-2.5DSA	HIR	30079-00700
CN802	H1F3F-30PA-2.54DS	HIR	
CN803	DF1-5P-2.5DSA	HIR	30079-00500
J1	PCN10-50S-2.54DSA	HIR	
J2	PCN10-50S-2.54DSA	HIR	
J3	PCN10-50S-2.54DSA	HIR	
J4	PCN10-50S-2.54DSA	HIR	
J5	PCN10-50S-2.54DSA	HIR	
J6	PCN10-50S-2.54DSA	HIR	
J7	PCN10-50S-2.54DSA	HIR	
J8	PCN10-50S-2.54DSA	HIR	
J9	PCN10-50S-2.54DSA	HIR	
<TEST POINTS>			
TP1	TBP-6	SJD	51572-00100
TP2	TBP-6	SJD	51572-00100
TP3	TBP-6	SJD	51572-00100
TP4	TBP-6	SJD	51572-00100
<OTHERS>			
	TC-80A(TO-220) (For IC1,2,3)	SKK	59001-01051

****
* 20/30SERIES *
* MPU BOARD *
****

<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD.	PARTS – CODE
IC101	HD6303YF	HIT	04214-00702
IC102	TL7700CPS	TEX	04574-01900
IC103	TC74HC 7266AF	TOS	04572-10850
IC104	TC74HC 00AF	TOS	04572-10010
IC105	HN27C256G-20	HIT	01218-01401
	110-13-628	PRM	54001-10628
IC106	HM6264ALFP-15L	HIT	04216-00301
IC107	LM311PS	TEX	04332-00100
IC108	TC74HC 138AF	TOS	04572-10380
IC109	TC74HC 138AF	TOS	04572-10380
IC110	TC74HC 367AF	TOS	04572-10990
IC111	TC74HC 04AF	TOS	04572-10040
IC112	TC74HC 374AF	TOS	04572-11030
IC113	μ PD6145G-101	NEC	04784-11130
IC114	μ PD4053BG	NEG	04784-03000
IC115	MC74HC 4053F/	MOT	04363-11200
	TC74HC 4053AF	TOS	04572-11650
IC116	TC74HC 374AF	TOS	04572-11030
IC117	TC74HC 245AF	TOS	04572-10770
IC118	TC74HC 374AF	TOS	04572-11030
IC119	TC74HC 374AF	TOS	04572-11030
IC120	AD7533JN	ANA	01001-00610
IC121	TL062CPS	TEX	04574-00200
IC122	μ PC1060C	NEC	01783-02560
IC123	μ PD4051BG	NEC	04784-02800
IC124	μ PD4051BG	NEC	04784-02800
IC125	TL062CPS	TEX	04574-00200
IC126	TL062CPS	TEX	04574-00200
IC127	TL062CPS	TEX	04574-00200
IC128	TL062CPS	TEX	04574-00200
IC129	TL062CPS	TEX	04574-00200
IC130	TL062CPS	TEX	04574-00200
IC131	TL062CPS	TEX	04574-00200
IC132	TL062CPS	TEX	04574-00200
IC133	TL062CPS	TEX	04574-00200
IC134	μ PD4053BG	NEC	04784-03000
IC135	μ PD4053BG	NEC	04784-03000
IC201	MC4044P	MOT	01363-01700
IC202	MC4024P	MOT	01363-01650
IC203	TC74HCU 04AF	TOS	04572-10050
IC204	74AC 00SJ	NSC	04871-15010
IC205	74ACT 161SJ	NSC	04871-15180
IC206	74ACT 161SJ	NSC	04871-15180
IC207	74ACT 161SJ	NSC	04871-15180
IC208	TC74HC 374AF	TOS	04572-11030
IC209	TC74HC 688AF	TOS	04572-11450
IC210	TC74HC 374AF	TOS	04572-11030
IC211	74AC 00SJ	NSC	04871-15010
IC212	TC74HC 30AF	TOS	04572-10150
IC213	TC74HC 10AF	TOS	04572-10090
IC214	TC74HC 74AF	TOS	04572-10200
IC215	TC74HC 161AF	TOS	04572-10500
IC216	TC74HC 161AF	TOS	04572-10500
IC217	TC74HC 161AF	TOS	04572-10500
IC218	TC74HC 10AF	TOS	04572-10090
IC219	TC74HC 04AF	TOS	04572-10040
IC220	TC74HC 00AF	TOS	04572-10010
IC221	TC74HC 4040AF	TOS	04572-11600
IC222	TC74HC 30AF	TOS	04572-10150
IC223	TC74HC 30AF	TOS	04572-10150
IC224	TC74HC 4040AF	TOS	04572-11600
IC225	MBM27C128-20CZ	FJT	01372-00400
	110-13-628	PRM	54001-10628
IC226	MBM27C128-20CZ	FJT	01372-00400
	110-13-628	PRM	54001-10628
IC227	SN74HC 166NS	TEX	04548-25540
IC228	μ PD6902C	NEC	01784-06900
IC229	TL431CLPB	TEX	01574-00711
IC230	μ PD4053BG	NEC	04784-03000

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr101	2SC3735-B35	NEC	05824-02840
Tr102	2SA812-M6,7	NEC	05822-04000
Tr103	2SA812-M6,7	NEC	05822-04000
Tr104	2SA812-M6,7	NEC	05822-04000
Tr105	XN1212-TX	MAT	05691-01210
Tr106	XN1212-TX	MAT	05691-01210
Tr107	XN1212-TX	MAT	05691-01210
Tr108	XN1212-TX	MAT	05691-01210
Tr109	XN1212-TX	MAT	05691-01210
Tr110	XN1212-TX	MAT	05691-01210
Tr111	XN1212-TX	MAT	05691-01210
Tr201	2SC3735-B35	NEC	05824-02840
Tr202	2SC3398	SYO	05824-02400
Tr203	XN6501-TW	MAT	05691-06500
Tr204	2SC1623-L6,7	NEC	05824-00100
Tr205	2SC1623-L6,7	NEC	05824-00100
Tr206	XN6501-TW	MAT	05691-06500
Tr207	2SC1623-L6,7	NEC	05824-00100
Tr208	2SC1623-L6,7	NEC	05824-00100
Tr209	XN6501-TW	MAT	05691-06500
Tr210	2SA1461-Y24	NEC	05822-11100
Tr211	2SC1623-L6,7	NEC	05824-00100
Tr212	2SC3398	SYO	05824-02400
Tr213	2SC3398	SYO	05824-02400
Tr214	FN1A4M	NEC	05151-01000

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D101	1SS123-A7	NEC	06813-00600
D102	1SS123-A7	NEC	06813-00600
D103	1SS123-A7	NEC	06813-00600
D104	1SS123-A7	NEC	06813-00600
D105	1SS123-A7	NEC	06813-00600
D106	1SS123-A7	NEC	06813-00600
D107	1SS123-A7	NEC	06813-00600
D108	1SS123-A7	NEC	06813-00600

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D109	1S2838-A6	NEC	06812-03500
D110	1SS101	NEC	03813-00500
D111	1SS101	NEC	03813-00500
D112	1SS101	NEC	03813-00500
D113	1S2838-A6	NEC	06812-03500
D114	1SS123-A7	NEC	06813-00600
D115	1S2836-A4	NEC	06812-03400
D116	1S2836-A4	NEC	06812-03400
D117	1SS123-A7	NEC	06813-00600
D118	1SS123-A7	NEC	06813-00600
D119	1SS123-A7	NEC	06813-00600
D120	1SS123-A7	NEC	06813-00600
D121	1SS123-A7	NEC	06813-00600
D122	1SS123-A7	NEC	06813-00600
D123	1SS123-A7	NEC	06813-00600
D124	1SS123-A7	NEC	06813-00600
D201	1S2838-A6	NEC	06812-03500
D202	1S2836-A4	NEC	06812-03400

<VARIABLE RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VR201	ST-4B 2000Ω	CPL	16542-20200
VR202	ST-4B 1000Ω	CPL	16542-10200
VR203	ST-4B 1000Ω	CPL	16542-10200

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R101	RR1220P 103D	SSM	16511-10381
R102	RR1220P 104D	SSM	16511-10481
R103	RR1220P 102D	SSM	16511-10281
R104	RR1220P 102D	SSM	16511-10281
R105	RR1220P 102D	SSM	16511-10281
R106	RMC 1/10 220KΩ F	KMY	16511-22481
R107	RR1220P 333D	SSM	16511-33381
R108	RR1220P 222D	SSM	16511-22281
R109	RR1220P 101D	SSM	16511-10181
R110	RR1220P 473D	SSM	16511-47381
R111	RR1220P 104D	SSM	16511-10481
R112	RR1220P 104D	SSM	16511-10481
R113	RR1220P 101D	SSM	16511-10181
R114	RR1220P 101D	SSM	16511-10181
R115	RR1220P 103D	SSM	16511-10381
R116	RR1220P 101D	SSM	16511-10181
R117	RR1220P 103D	SSM	16511-10381
R118	RR1220P 101D	SSM	16511-10181
R119	RR1220P 101D	SSM	16511-10181
R120	RR1220P 473D	SSM	16511-47381
R121	RR1220P 101D	SSM	16511-10181
R122	RR1220P 101D	SSM	16511-10181
R123	RR1220P 101D	SSM	16511-10181
R124	RR1220P 222D	SSM	16511-22281
R125	RR1220P 333D	SSM	16511-33381
R126	RR1220P 243D	SSM	16511-24381
R127	RR1220P 512D	SSM	16511-51281
R128	RR1220P 152D	SSM	16511-15281
R129	RR1220P 103D	SSM	16511-10381
R130	RR1220P 243D	SSM	16511-24381
R131	RR1220P 223D	SSM	16511-22381
R132	RR1220P 103D	SSM	16511-10381
R133	RR1220P 101D	SSM	16511-10181
R134	RR1220P 123D	SSM	16511-12381
R135	RR1220P 123D	SSM	16511-12381
R136	RR1220P 123D	SSM	16511-12381
R137	RR1220P 431D	SSM	16511-43181
R138	RR1220P 431D	SSM	16511-43181
R139	RR1220P 431D	SSM	16511-43181
R140	RR1220P 103D	SSM	16511-10381
R141	RR1220P 101D	SSM	16511-10181
R142	RR1220P 682D	SSM	16511-68281
R143	RR1220P 101D	SSM	16511-10181
R144	RR1220P 682D	SSM	16511-68281
R145	RR1220P 101D	SSM	16511-10181
R146	RR1220P 682D	SSM	16511-68281
R147	RR1220P 103D	SSM	16511-10381
R148	RR1220P 101D	SSM	16511-10181
R149	RR1220P 101D	SSM	16511-10181
R150	RR1220P 101D	SSM	16511-10181
R151	RR1220P 101D	SSM	16511-10181
R152	RR1220P 101D	SSM	16511-10181
R153	RR1220P 101D	SSM	16511-10181
R154	RR1220P 101D	SSM	16511-10181
R155	RR1220P 101D	SSM	16511-10181
R156	RR1220P 101D	SSM	16511-10181
R157	RR1220P 101D	SSM	16511-10181
R158	RR1220P 101D	SSM	16511-10181
R159	RR1220P 101D	SSM	16511-10181
R160	RR1220P 101D	SSM	16511-10181
R161	RR1220P 101D	SSM	16511-10181
R162	RR1220P 101D	SSM	16511-10181
R163	RR1220P 101D	SSM	16511-10181
R164	RR1220P 101D	SSM	16511-10181
R165	RR1220P 101D	SSM	16511-10181
R166	RR1220P 132D	SSM	16511-13281
R167	RR1220P 432D	SSM	16511-43281
R168	RR1220Q 100F	SSM	16511-10081
R169	RR1220P 332D	SSM	16511-33281
R170	RR1220P 332D	SSM	16511-33281
R171	RR1220P 101D	SSM	16511-10181
R172	RR1220P 101D	SSM	16511-10181
R173	RR1220P 101D	SSM	16511-10181
R174	RR1220P 101D	SSM	16511-10181
R175	RR1220P 101D	SSM	16511-10181
R176	RR1220P 101D	SSM	16511-10181
R177	RR1220P 101D	SSM	16511-10181
R178	RR1220P 101D	SSM	16511-10181
R179	RR1220P 101D	SSM	16511-10181
R180	RR1220P 101D	SSM	16511-10181
R181	RR1220P 101D	SSM	16511-10181
R182	RR1220P 101D	SSM	16511-10181
R183	RR1220P 101D	SSM	16511-10181

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* 20/30SERIES *
* MPU BOARD *
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<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R184	RR1220P 101D	SSM	16511-10181
R185	RR1220P 101D	SSM	16511-10181
R186	RR1220P 101D	SSM	16511-10181
R187	RR1220P 101D	SSM	16511-10181
R188	RR1220P 101D	SSM	16511-10181
R189	RR1220P 101D	SSM	16511-10181
R190	RR1220P 101D	SSM	16511-10181
R191	RR1220P 101D	SSM	16511-10181
R192	RR1220P 103D	SSM	16511-10381
R193	RR1220P 103D	SSM	16511-10381
R194	RR1220P 103D	SSM	16511-10381
R195	RR1220P 103D	SSM	16511-10381
R196	RR1220P 103D	SSM	16511-10381
R201	RR1220P 681D	SSM	16511-68181
R202	RR1220P 242D	SSM	16511-24281
R203	RR1220P 103D	SSM	16511-10381
R204	RR1220P 103D	SSM	16511-10381
R205	RR1220P 102D	SSM	16511-10281
R206	RR1220P 122D	SSM	16511-12281
R207	RR1220P 102D	SSM	16511-10281
R208	RR1220Q 180F	SSM	16511-18081
R209	RR1220Q 180F	SSM	16511-18081
R210	RR1220P 101D	SSM	16511-10181
R211	RMC 1/10 1MΩ F	KMY	16511-10581
R212	RR1220P 104D	SSM	16511-10481
R213	RR1220P 104D	SSM	16511-10481
R214	RR1220P 102D	SSM	16511-10281
R215	RR1220P 101D	SSM	16511-10181
R217	RR1220P 101D	SSM	16511-10181
R218	RR1220P 102D	SSM	16511-10281
R219	*		
R220	RR1220P 362D	SSM	16511-36281
R221	RR1220P 472D	SSM	16511-47281
R222	RR1220P 472D	SSM	16511-47281
R223	RR1220P 102D	SSM	16511-10281
R224	RR1220P 101D	SSM	16511-10181
R225	RR1220P 472D	SSM	16511-47281
R226	RR1220P 103D	SSM	16511-10381
R227	RR1220P 104D	SSM	16511-10481
R228	RMC 1/10 150KΩ F	KMY	16511-15481
R231	RR1220P 201D	SSM	16511-20181
R232	RR1220P 101D	SSM	16511-10181
R233	RR1220P 221D	SSM	16511-22181
R234	RR1220P 101D	SSM	16511-10181
R235	RR1220P 102D	SSM	16511-10281
R236	*		
R237	RR1220P 471D	SSM	16511-47181
R238	RR1220P 472D	SSM	16511-47281
R239	RR1220P 102D	SSM	16511-10281
R240	RR1220P 472D	SSM	16511-47281
R241	RR1220P 101D	SSM	16511-10181
R242	RR1220P 473D	SSM	16511-47381
R243	RR1220P 563D	SSM	16511-56381
R244	RR1220P 472D	SSM	16511-47281
R245	RR1220P 332D	SSM	16511-33281
R246	RR1220P 332D	SSM	16511-33281
R247	RR1220P 472D	SSM	16511-47281
R248	RR1220P 473D	SSM	16511-47381
R249	RR1220P 473D	SSM	16511-47381
R250	RR1220P 101D	SSM	16511-10181
R251	RR1220P 332D	SSM	16511-33281
R252	RR1220P 472D	SSM	16511-47281
R253	*		
R254	RR1220P 471D	SSM	16511-47181
R255	RR1220P 472D	SSM	16511-47281
R256	RR1220P 332D	SSM	16511-33281
R257	RR1220P 101D	SSM	16511-10181
R258	RR1220P 473D	SSM	16511-47381
R259	RR1220P 513D	SSM	16511-51381
R260	RR1220P 103D	SSM	16511-10381
R261	RR1220P 103D	SSM	16511-10381
R262	RR1220P 103D	SSM	16511-10381
R263	RR1220P 101D	SSM	16511-10181
R264	RR1220P 104D	SSM	16511-10481

<NETWORK RESISTOR>

No.	DESCRIPTION	MFD.	PARTS – CODE
RP101	M7-1-103J	BEC	19032-71103

<VARIABLE CAPACITOR>

No.	DESCRIPTION	MFD.	PARTS – CODE
VC201	ECV 1ZW 20X53T	MAT	25010-00300

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C101	267M 3502 474M	NCC	26821-47435
C102	CM21CH 101J 25VB T A2	KYC	26061-10125
C103	CM21CH 150J 25VB T E1	KYC	26061-15025
C104	CM21CH 150J 25VB T E1	KYC	26061-15025
C105	ECEA 1CK 101	MAT	20128-10716
C106	CM21W5R 473M 25VB T S4	KYC	26062-47325
C107	ECEA 1CK 101	MAT	20128-10716
C108	CM21W5R 473M 25VB T S4	KYC	26062-47325
C109	ECEA 1CK 101	MAT	20128-10716
C110	CM21W5R 473M 25VB T S4	KYC	26062-47325
C111	CM21W5R 473M 25VB T S4	KYC	26062-47325
C112	CM21W5R 473M 25VB T S4	KYC	26062-47325
C113	CM21W5R 473M 25VB T S4	KYC	26062-47325
C114	CM21W5R 473M 25VB T S4	KYC	26062-47325
C115	CM21W5R 473M 25VB T S4	KYC	26062-47325
C116	CM21W5R 473M 25VB T S4	KYC	26062-47325
C117	CM21W5R 473M 25VB T S4	KYC	26062-47325
C118	CM21W5R 473M 25VB T S4	KYC	26062-47325
C119	CM21W5R 473M 25VB T S4	KYC	26062-47325
C120	CM21W5R 473M 25VB T S4	KYC	26062-47325
C121	CM21W5R 473M 25VB T S4	KYC	26062-47325
C122	CM21W5R 473M 25VB T S4	KYC	26062-47325
C123	CM21W5R 473M 25VB T S4	KYC	26062-47325
C124	CM21W5R 473M 25VB T S4	KYC	26062-47325
C125	DHR 0J 106K1S	NEC	21092-10606

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C126	CM21W5R 473M 25VB T S4	KYC	26062-47325
C127	CM21CH 150J 25VB T E1	KYC	26061-15025
C128	CM21CH 150J 25VB T E1	KYC	26061-15025
C129	CM21W5R 473M 25VB T S4	KYC	26062-47325
C130	CM21W5R 473M 25VB T S4	KYC	26062-47325
C131	CM21W5R 473M 25VB T S4	KYC	26062-47325
C132	*		
C133	CM21W5R 473M 25VB T S4	KYC	26062-47325
C134	CM21W5R 473M 25VB T S4	KYC	26062-47325
C135	CM21W5R 473M 25VB T S4	KYC	26062-47325
C136	ECEA 1CKA 470	MAT	20138-47616
C137	ECEA 1CKA 470	MAT	20138-47616
C138	CM21W5R 473M 25VB T S4	KYC	26062-47325
C139	CM21W5R 223M 25VB T J4	KYC	26062-22325
C140	CM21W5R 223M 25VB T J4	KYC	26062-22325
C141	CM21W5R 223M 25VB T J4	KYC	26062-22325
C142	CM21W5R 223M 25VB T J4	KYC	26062-22325
C143	CM21W5R 223M 25VB T J4	KYC	26062-22325
C144	CM21W5R 223M 25VB T J4	KYC	26062-22325
C145	CM21W5R 223M 25VB T J4	KYC	26062-22325
C146	CM21W5R 223M 25VB T J4	KYC	26062-22325
C147	CM21W5R 223M 25VB T J4	KYC	26062-22325
C148	CM21W5R 223M 25VB T J4	KYC	26062-22325
C149	CM21W5R 223M 25VB T J4	KYC	26062-22325
C150	CM21W5R 223M 25VB T J4	KYC	26062-22325
C151	CM21W5R 223M 25VB T J4	KYC	26062-22325
C152	CM21W5R 223M 25VB T J4	KYC	26062-22325
C153	CM21W5R 223M 25VB T J4	KYC	26062-22325
C154	CM21W5R 223M 25VB T J4	KYC	26062-22325
C155	CM21W5R 223M 25VB T J4	KYC	26062-22325
C156	CM21CH 102J 25VB T A3	KYC	26061-10225
C157	CM21CH 102J 25VB T A3	KYC	26061-10225
C201	ECEA 1CK 101	MAT	20128-10716
C202	CM21W5R 473M 25VB T S4	KYC	26062-47325
C203	267M 3502 474M	NCC	26821-47435
C204	CM21W5R 473M 25VB T S4	KYC	26062-47325
C205	CM21W5R 473M 25VB T S4	KYC	26062-47325
C206	CM21CH 180J 25VB T G1	KYC	26061-18025
C207	CM21CH 220J 25VB T J1	KYC	26061-22025
C208	CM21CH 150J 25VB T E1	KYC	26061-15025
C209	ECEA 1CKA 470	MAT	20138-47616
C210	CM21W5R 473M 25VB T S4	KYC	26062-47325
C211	ECEA 1CKA 470	MAT	20138-47616
C212	CM21W5R 473M 25VB T S4	KYC	26062-47325
C213	ECEA 1HKA 010	MAT	20138-10550
C214	CM21W5R 473M 25VB T S4	KYC	26062-47325
C215	ECEA 1CKA 470	MAT	20138-47616
C216	*		
C217	CM21CH 390J 25VB T Q1	KYC	26061-39025
C218	ECEA 1CKA 220	MAT	20138-22616
C219	CM21W5R 473M 25VB T S4	KYC	26062-47325
C220	ECEA 1CK 101	MAT	20128-10716
C221	CM21W5R 473M 25VB T S4	KYC	26062-47325
C222	ECEA 1CK 101	MAT	20128-10716
C223	*		
C225	CM21CH 680J 25VB T W1	KYC	26061-68025
C226	ECEA 1CKA 220	MAT	20138-22616
C227	ECEA 1CKA 470	MAT	20138-47616
C228	ECEA 1CKA 220	MAT	20138-22616
C229	CM21CH 680J 25VB T W1	KYC	26061-68025
C230	*		
C231	CM21W5R 473M 25VB T S4	KYC	26062-47325
C232	CM21W5R 473M 25VB T S4	KYC	26062-47325
C233	CM21W5R 473M 25VB T S4	KYC	26062-47325
C234	CM21W5R 473M 25VB T S4	KYC	26062-47325
C235	CM21W5R 473M 25VB T S4	KYC	26062-47325
C236	CM21W5R 473M 25VB T S4	KYC	26062-47325
C237	CM21W5R 473M 25VB T S4	KYC	26062-47325
C238	CM21W5R 473M 25VB T S4	KYC	26062-47325
C239	CM21W5R 473M 25VB T S4	KYC	26062-47325
C240	CM21W5R 473M 25VB T S4	KYC	26062-47325
C241	CM21W5R 473M 25VB T S4	KYC	26062-47325
C242	CM21W5R 473M 25VB T S4	KYC	26062-47325
C243	CM21W5R 473M 25VB T S4	KYC	26062-47325
C245	CM21W5R 473M 25VB T S4	KYC	26062-47325
C246	CM21W5R 473M 25VB T S4	KYC	26062-47325
C247	CM21W5R 473M 25VB T S4	KYC	26062-47325
C248	CM21W5R 473M 25VB T S4	KYC	26062-47325
C249	CM21W5R 473M 25VB T S4	KYC	26062-47325
C250	CM21W5R 473M 25VB T S4	KYC	26062-47325
C251	CM21W5R 473M 25VB T S4	KYC	26062-47325
C252	CM21W5R 473M 25VB T S4	KYC	26062-47325
C253	CM21W5R 473M 25VB T S4	KYC	26062-47325
C254	CM21W5R 473M 25VB T S4	KYC	26062-47325
C255	CM21W5R 473M 25VB T S4	KYC	26062-47325
C256	CM21W5R 473M 25VB T S4	KYC	26062-47325

<INDUCTANCE COILS>

No.	DESCRIPTION	MFD.	PARTS – CODE
L101	TSL0707-101KR66	TDK	40586-00103
L102	TSL0707-101KR66	TDK	40586-00103
L103	TSL0707-101KR66	TDK	40586-00103
L104	P-390	SUD	40451-39000
L201	TSL0707-101KR66	TDK	40586-00103
L202	TSL0707-101KR66	TDK	40586-00103
L203	TSL0707-101KR66	TDK	40586-00103
L204	TSL0707-101KR66	TDK	40586-00103

<X'TALS>

No.	DESCRIPTION	MFD.	PARTS – CODE
X101	HC-49/U-S (4MHz)	KIN	45006-00104
X201	HC-49/U-A (18MHz)	KIN	45006-00208

<CONNECTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
J 1	PCN10A-50P-2.54DS	HIR	30333-09500
J 2	PCN10A-50P-2.54DS	HIR	30333-09500

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***************
* 20/30SERIES *
*  MPU BOARD  *
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No.	DESCRIPTION	MFD.	PARTS – CODE
<CONNECTORS>			
EL101	00-8261-0633-11-852	ELC	30507-00260
	00-8261-0249-00-870	ELC	30507-00100
<TEST POINTS>			
TP201	HK-2-G	MAC	39510-00200
TP202	HK-2-G	MAC	39510-00200
TP203	HK-2-G	MAC	39510-00200
TP204	HK-2-G	MAC	39510-00200
TP205	HK-2-G	MAC	39510-00200
TP206	HK-2-G	MAC	39510-00200
<OTHER>			
BT101	BR2330-1HF	MAT	57001-00650

No. DESCRIPTION MFD. PARTS – CODE

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• 20/30SERIES •
• INTERFACE BOARD •

<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD.	PARTS – CODE
IC1	μPD4053BG	NEC	04784-03000
IC2	LM318PS	TEX	04332-00180
IC3	μPC393G2	NEC	04783-00500
IC4	TC74HC 00AF	TOS	04572-10010
IC5	MC74HC 4053F	MOT	04363-11200
IC6	TC74HC 4538AF	TOS	04572-11790
IC7	TC74HC 4538AF	TOS	04572-11790
IC8	TC74HC 4538AF	TOS	04572-11790
IC9	TC74HC 138AF	TOS	04572-10380
IC10	TC74HC 374AF	TOS	04572-11030
IC11	TC74HC 244AF	TOS	04572-10760
IC12	TC74HC 244AF	TOS	04572-10760
IC13	TC74HC 374AF	TOS	04572-11030
IC14	MC74HC 4053F	MOT	04363-11200
IC15	TC74HC 4538AF	TOS	04572-11790
IC16	TC74HC 4538AF	TOS	04572-11790
IC17	TC74HC 74AF	TOS	04572-10200
IC18	TC74HC 163AF	TOS	04572-10520
IC19	TC74HC 04AF	TOS	04572-10040
IC20	TC74HC 10AF	TOS	04572-10090
IC21	TC74HC 74AF	TOS	04572-10200
IC22	TC74HC 374AF	TOS	04572-11030
IC23	TC74HC 688AF	TOS	04572-11450
IC24	TC74HC 393AF	TOS	04572-11090
IC25	TC74HC 00AF	TOS	04572-10010
IC26	AN5560	MAT	01004-05560
IC27	TC74HC 174AF	TOS	04572-10570
IC28	TC74HC 244AF	TOS	04572-10760
IC29	TC74HC 374AF	TOS	04572-11030
IC30	TLP521-1	TOS	09572-00302
IC31	TC74HC 4538AF	TOS	04572-11790
IC201	μPD4053BG	NEC	04784-03000
IC202	LA7016	SYO	01333-00600
IC203	TL431CLPB	TEX	01574-00711
IC301	μPD4053BG	NEC	04784-03000

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr1	2SA812-M6,7	NEC	05822-04000
Tr2	2SC1623-L6,7	NEC	05824-00100
Tr3	2SC1623-L6,7	NEC	05824-00100
Tr4	2SC1623-L6,7	NEC	05824-00100
Tr5	2SC3398	SYO	05824-02400
Tr6	2SC3398	SYO	05824-02400
Tr7	2SC3398	SYO	05824-02400
Tr8	2SA812-M6,7	NEC	05822-04000
Tr9	2SC3398	SYO	05824-02400
Tr10	2SC1623-L6,7	NEC	05824-00100
Tr11	2SA812-M6,7	NEC	05822-04000
Tr13	2SC3398	SYO	05824-02400
Tr14	2SC3398	SYO	05824-02400
Tr15	2SC3398	SYO	05824-02400
Tr16	2SC3398	SYO	05824-02400
Tr17	2SC3398	SYO	05824-02400
Tr18	2SC1623-L6,7	NEC	05824-00100
Tr19	2SA812-M6,7	NEC	05822-04000
Tr20	2SC1623-L6,7	NEC	05824-00100
Tr21	FN1A4M	NEC	05151-01000
Tr22	2SC1623-L6,7	NEC	05824-00100
Tr25	2SC3735-B35	NEC	05824-02840
Tr26	2SC1623-L6,7	NEC	05824-00100
Tr27	2SA812-M6,7	NEC	05822-04000
Tr28	2SC3735-B35	NEC	05824-02840
Tr29	2SB648A-C	HIT	02823-00401
Tr30	2SC1514	HIT	02824-04945
Tr31	2SC3735-B35	NEC	05824-02840
Tr32	2SC3735-B35	NEC	05824-02840
Tr33	2SC1623-L6,7	NEC	05824-00100
Tr34	2SA812-M6,7	NEC	05822-04000
Tr35	2SC1623-L6,7	NEC	05824-00100
Tr36	2SA812-M6,7	NEC	05822-04000
Tr37	2SC1623-L6,7	NEC	05824-00100
Tr38	2SA812-M3,7	NEC	05822-04000
Tr39	2SC1623-L6,7	NEC	05824-00100
Tr40	FN1A4M	NEC	05151-01000
Tr41	2SC3398	SYO	05824-02400
Tr201	2SA812-M6,7	NEC	05822-04000
Tr202	2SC3398	SYO	05824-02400
Tr203	2SC1623-L6,7	NEC	05824-00100
Tr204	2SC3735-B35	NEC	05824-02840
Tr205	2SA812-M6,7	NEC	05822-04000
Tr206	2SC1623-L6,7	NEC	05824-00100
Tr207	2SA812-M6,7	NEC	05822-04000
Tr208	2SA812-M6,7	NEC	05822-04000
Tr209	2SC3398	SYO	05824-02400
Tr210	2SC1623-L6,7	NEC	05824-00100
Tr211	2SC3735-B35	NEC	05824-02840
Tr212	2SA812-M6,7	NEC	05822-04000
Tr213	2SA812-M6,7	NEC	05822-04000
Tr214	2SC3398	SYO	05824-02400
Tr215	2SA812-M6,7	NEC	05822-04000
Tr216	2SC3398	SYO	05824-02400
Tr301	2SA812-M6,7	NEC	05822-04000
Tr302	XN6501-TW	MAT	05691-06500
Tr303	2SC1623-L6,7	NEC	05824-00100
Tr304	2SC1623-L6,7	NEC	05824-00100
Tr305	2SC1623-L6,7	NEC	05824-00100
Tr306	FN1A4M	NEC	05151-01000
Tr307	2SC1623-L6,7	NEC	05824-00100
Tr308	2SA812-M6,7	NEC	05822-04000
Tr309	2SA812-M6,7	NEC	05822-04000
Tr310	2SC1623-L6,7	NEC	05824-00100
Tr311	2SC1623-L6,7	NEC	05824-00100
Tr312	2SC3398	SYO	05824-02400
Tr313	2SC1623-L6,7	NEC	05824-00100
Tr314	FN1A4M	NEC	05151-01000
Tr315	2SC1623-L6,7	NEC	05824-00100

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr316	2SA812-M6,7	NEC	05822-04000
Tr317	XN6501-TW	MAT	05691-06500
Tr318	2SC1623-L6,7	NEC	05824-00100
Tr319	2SC1623-L6,7	NEC	05824-00100
Tr320	2SC1623-L6,7	NEC	05824-00100
Tr321	FN1A4M	NEC	05151-01000
Tr322	2SC3398	SYO	05824-02400
Tr323	2SC1623-L6,7	NEC	05824-00100

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D1	1SS101	NEC	03813-00500
D2	1SS101	NEC	03813-00500
D3	1SS101	NEC	03813-00500
D4	1SS123-A7	NEC	06813-00600
D5	1S2836-A4	NEC	06812-03400
D6	1SS123-A7	NEC	06813-00600
D7	1SS123-A7	NEC	06813-00600
D8	1SS123-A7	NEC	06813-00600
D9	1SS123-A7	NEC	06813-00600
D10	1SS123-A7	NEC	06813-00600
D11	1SS123-A7	NEC	06813-00600
D12	1SS123-A7	NEC	06813-00600
D13	1SS123-A7	NEC	06813-00600
D14	1SS123-A7	NEC	06813-00600
D15	1SS123-A7	NEC	06813-00600
D16	1SS123-A7	NEC	06813-00600
D17	1SS123-A7	NEC	06813-00600
D18	1S2838-A6	NEC	06812-03500
D20	DFH10TG	SYO	03093-00200
D21	DFH10TG	SYO	03093-00200
D22	DFH10TG	SYO	03093-00200
D23	DFH10TG	SYO	03093-00200
D24	DFH10TG	SYO	03093-00200
D25	1S2838-A6	NEC	06812-03500
D26	1S2836-A4	NEC	06812-03400
D27	1S2836-A4	NEC	06812-03400
D28	1SS123-A7	NEC	06813-00600
D29	1SS123-A7	NEC	06813-00600
D30	1SS123-A7	NEC	06813-00600
D31	1SS123-A7	NEC	06813-00600
D32	1SS123-A7	NEC	06813-00600
D33	1SS123-A7	NEC	06813-00600
D34	1SS123-A7	NEC	06813-00600
D201	1S2838-A6	NEC	06812-03500
D202	1S2838-A6	NEC	06812-03500
D203	1S2838-A6	NEC	06812-03500
D301	1S2836-A4	NEC	06812-03400
D302	RD6R8MB	NEC	06513-01700
D303	1S2836-A4	NEC	06812-03400
D304	1S2836-A4	NEC	06812-03400

<VARIABLE RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VR1	ST-4B 50KΩ	CPL	16542-50300
VR2	ST-4B 50KΩ	CPL	16542-50300
VR3	ST-4B 50KΩ	CPL	16542-50300
VR4	ST-4B 50KΩ	CPL	16542-50300
VR5	ST-4B 50KΩ	CPL	16542-50300
VR6	ST-4B 50KΩ	CPL	16542-50300
VR7	ST-4B 200KΩ	CPL	16542-20400
VR8	ST-4B 200KΩ	CPL	16542-20400
VR9	ST-4B 200KΩ	CPL	16542-20400
VR10	ST-4B 100KΩ	CPL	16542-10400
VR11	ST-4B 100KΩ	CPL	16542-10400
VR201	ST-4B 5000Ω	CPL	16542-50200
VR301	ST-4B 1000Ω	CPL	16542-10200
VR303	ST-4B 5000Ω	CPL	16542-50200
VR304	ST-4B 1000Ω	CPL	16542-10200
VR305	ST-4B 1000Ω	CPL	16542-10200
VR307	ST-4B 5000Ω	CPL	16542-50200

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R1	RR1220P 101D	SSM	16511-10181
R2	RR1220P 682D	SSM	16511-68281
R3	RR1220P 473D	SSM	16511-47381
R4	RMC 1/10 120KΩ F	KMY	16511-12481
R5	RR1220P 472D	SSM	16511-47281
R6	RR1220P 101D	SSM	16511-10181
R7	RR1220P 101D	SSM	16511-10181
R8	RR1220P 472D	SSM	16511-47281
R9	RR1220P 472D	SSM	16511-47281
R10	RR1220P 104D	SSM	16511-10481
R11	RR1220P 104D	SSM	16511-10481
R12	RR1220P 102D	SSM	16511-10281
R13	RR1220P 103D	SSM	16511-10381
R14	RR1220P 101D	SSM	16511-10181
R15	RR1220P 331D	SSM	16511-33181
R16	RR1220P 103D	SSM	16511-10381
R17	RMC 1/10 1MΩ F	KMY	16511-10581
R18	ERC-14GJ 106	MAT	13001-10613
R19	RR1220P 683D	SSM	16511-68381
R20	RR1220P 473D	SSM	16511-47381
R21	RR1220P 222D	SSM	16511-22281
R22	RMC 1/10 330KΩ F	KMY	16511-33481
R23	RMC 1/10 150KΩ F	KMY	16511-15481
R24	RR1220P 103D	SSM	16511-10381
R25	RR1220P 222D	SSM	16511-22281
R26	RR1220P 102D	SSM	16511-10281
R27	RR1220P 101D	SSM	16511-10181
R28	RR1220P 222D	SSM	16511-22281
R29	RR1220P 332D	SSM	16511-33281
R30	RR1220P 472D	SSM	16511-47281
R32	RR1220P 223D	SSM	16511-22381
R33	RR1220P 101D	SSM	16511-10181
R34	RR1220P 333D	SSM	16511-33381

• 20/30SERIES •
• INTERFACE BOARD •

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R35	RR1220P 101D	SSM	16511-10181
R36	RR1220P 333D	SSM	16511-33381
R37	RR1220P 101D	SSM	16511-10181
R38	RR1220P 103D	SSM	16511-10381
R39	RR1220P 223D	SSM	16511-22381
R40	RR1220P 223D	SSM	16511-22381
R41	RR1220P 101D	SSM	16511-10181
R42	RR1220P 101D	SSM	16511-10181
R43	RR1220P 101D	SSM	16511-10181
R44	RR1220P 101D	SSM	16511-10181
R45	RR1220P 101D	SSM	16511-10181
R46	RR1220P 101D	SSM	16511-10181
R47	RR1220P 101D	SSM	16511-10181
R48	RR1220P 101D	SSM	16511-10181
R49	RR1220P 101D	SSM	16511-10181
R50	RR1220P 101D	SSM	16511-10181
R51	RR1220P 101D	SSM	16511-10181
R52	RR1220P 101D	SSM	16511-10181
R53	RR1220P 101D	SSM	16511-10181
R54	RR1220P 101D	SSM	16511-10181
R55	RR1220P 103D	SSM	16511-10381
R56	RR1220P 104D	SSM	16511-10481
R57	RR1220Q 100F	SSM	16511-10181
R59	RR1220P 101D	SSM	16511-10181
R60	RR1220P 101D	SSM	16511-10181
R61	RR1220P 101D	SSM	16511-10181
R62	RR1220P 101D	SSM	16511-10181
R63	RR1220P 101D	SSM	16511-10181
R64	RR1220P 332D	SSM	16511-33281
R65	RR1220P 222D	SSM	16511-22281
R66	RR1220P 222D	SSM	16511-22281
R67	RR1220P 222D	SSM	16511-22281
R68	RR1220P 332D	SSM	16511-33281
R69	RR1220P 101D	SSM	16511-10181
R70	RR1220P 104D	SSM	16511-10481
R71	RR1220P 222D	SSM	16511-22281
R72	RR1220P 101D	SSM	16511-10181
R73	RR1220P 101D	SSM	16511-10181
R74	RR1220P 104D	SSM	16511-10481
R75	RR1220P 101D	SSM	16511-10181
R76	RMC 1/10 120KΩ F	KMY	16511-12481
R77	RR1220P 433D	SSM	16511-43381
R78	RMC 1/10 330KΩ F	KMY	16511-33481
R81	RR1220P 101D	SSM	16511-10181
R82	RR1220P 273D	SSM	16511-27381
R85	RR1220P 473D	SSM	16511-47381
R86	RR1220P 101D	SSM	16511-10181
R87	RR1220P 473D	SSM	16511-47381
R88	RR1220P 223D	SSM	16511-22381
R89	RR1220P 472D	SSM	16511-47281
R90	RR1220P 102D	SSM	16511-10281
R91	RR1220P 103D	SSM	16511-10381
R92	RR1220P 101D	SSM	16511-10181
R93	RR1220P 101D	SSM	16511-10181
R94	RR1220P 103D	SSM	16511-10381
R95	RR1220P 223D	SSM	16511-22381
R96	RR1220P 102D	SSM	16511-10281
R97	RR1220P 104D	SSM	16511-10481
R98	RR1220P 471D	SSM	16511-47181
R99	RR1220P 103D	SSM	16511-10381
R100	RR1220P 103D	SSM	16511-10381
R101	RR1220P 332D	SSM	16511-33281
R102	RR1220P 103D	SSM	16511-10381
R103	RR1220P 103D	SSM	16511-10381
R104	RR1220P 101D	SSM	16511-10181
R105	RR1220P 101D	SSM	16511-10181
R106	RR1220P 472D	SSM	16511-47281
R107	RR1220P 102D	SSM	16511-10281
R108	RR1220P 101D	SSM	16511-10181
R109	RR1220P 101D	SSM	16511-10181
R110	RR1220P 472D	SSM	16511-47281
R111	RR1220P 103D	SSM	16511-10381
R112	RR1220P 103D	SSM	16511-10381
R113	RR1220P 222D	SSM	16511-22281
R114	RR1220P 101D	SSM	16511-10181
R115	RR1220P 101D	SSM	16511-10181
R116	RR1220P 101D	SSM	16511-10181
R117	RR1220P 472D	SSM	16511-47281
R118	RR1220P 102D	SSM	16511-10281
R119	RR1220P 103D	SSM	16511-10381
R120	RR1220P 123D	SSM	16511-12381
R121	RR1220P 103D	SSM	16511-10381
R122	RR1220P 332D	SSM	16511-33281
R123	RR1220P 332D	SSM	16511-33281
R124	RR1220P 332D	SSM	16511-33281
R125	RR1220P 332D	SSM	16511-33281
R126	RR1220P 332D	SSM	16511-33281
R127	RR1220P 332D	SSM	16511-33281
R128	RR1220P 332D	SSM	16511-33281
R129	RR1220P 101D	SSM	16511-10181
R130	RR1220P 101D	SSM	16511-10181
R131	RR1220P 101D	SSM	16511-10181
R132	RR1220P 101D	SSM	16511-10181
R133	RR1220P 101D	SSM	16511-10181
R134	RR1220P 101D	SSM	16511-10181
R135	RR1220P 101D	SSM	16511-10181
R136	RR1220P 101D	SSM	16511-10181
R137	RR1220P 104D	SSM	16511-10481
R138	RR1220P 101D	SSM	16511-10181
R139	RR1220P 104D	SSM	16511-10481
R140	RR1220P 104D	SSM	16511-10481
R141	RR1220P 104D	SSM	16511-10481
R142	RR1220P 104D	SSM	16511-10481
R201	RR1220P 102D	SSM	16511-10281
R202	RR1220P 152D	SSM	16511-15281
R203	RR1220P 102D	SSM	16511-10281
R204	RR1220P 102D	SSM	16511-10281
R205	RR1220P 472D	SSM	16511-47281
R206	RR1220P 681D	SSM	16511-68181
R207	RR1220P 472D	SSM	16511-47281
R208	RR1220P 683D	SSM	16511-68381
R209	RR1220P 332D	SSM	16511-33281
R210	RR1220P 682D	SSM	16511-68281
R211	RR1220P 101D	SSM	16511-10181
R212	RR1220P 152D	SSM	16511-15281
R213	RR1220P 152D	SSM	16511-15281
R214	ERDS1VJ 100 T	MAT	12106-10033
R215	RR1220P 102D	SSM	16511-10281
R216	RR1220P 152D	SSM	16511-15281
R217	RR1220P 102D	SSM	16511-10281
R218	RR1220P 102D	SSM	16511-10281
R219	RR1220P 472D	SSM	16511-47281
R220	RR1220P 681D	SSM	16511-68181
R221	RR1220P 472D	SSM	16511-47281
R222	RR1220P 332D	SSM	16511-33281
R223	RR1220P 101D	SSM	16511-10181
R224	RR1220P 222D	SSM	16511-22281
R225	RR1220P 104D	SSM	16511-10481
R226	RR1220P 102D	SSM	16511-10281
R227	RR1220P 152D	SSM	16511-15281
R228	RR1220P 102D	SSM	16511-10281
R229	RR1220P 152D	SSM	16511-15281
R230	RR1220P 562D	SSM	16511-56281
R231	RR1220P 472D	SSM	16511-47281
R301	ERDS1VJ 100 T	MAT	12106-10033
R302	RR1220P 101D	SSM	16511-10181
R303	RR1220P 751D	SSM	16511-75181
R304	RR1220P 101D	SSM	16511-10181
R305	RR1220P 102D	SSM	16511-10281
R306	RR1220P 332D	SSM	16511-33281
R307	RR1220P 102D	SSM	16511-10281
R308	RR1220P 471D	SSM	16511-47181
R309	RR1220P 332D	SSM	16511-33281
R310	RR1220P 101D	SSM	16511-10181
R311	RR1220P 622D	SSM	16511-62281
R312	RR1220P 103D	SSM	16511-10381
R313	RR1220P 101D	SSM	16511-10181
R314	RR1220P 472D	SSM	16511-47281
R315	RR1220P 393D	SSM	16511-39381
R316	RR1220P 473D	SSM	16511-47381
R317	RR1220P 472D	SSM	16511-47281
R318	RMC 1/10 150KΩ F	KMY	16511-15481
R319	RR1220P 103D	SSM	16511-10381
R320	RR1220P 104D	SSM	16511-10481
R321	ERDS1VJ 100 T	MAT	12106-10033
R322	RR1220P 101D	SSM	16511-10181
R323	RR1220P 751D	SSM	16511-75181
R324	RR1220P 103D	SSM	16511-10381
R325	RR1220P 101D	SSM	16511-10181
R326	RR1220P 472D	SSM	16511-47281
R327	RR1220P 332D	SSM	16511-33281
R328	RR1220Q 330F	SSM	16511-33081
R329	RR1220P 162D	SSM	16511-16281
R330	RR1220P 101D	SSM	16511-10181
R331	RR1220P 912D	SSM	16511-91281
R332	RMC 1/10 JP	KMY	16511-00000
R333	RR1220P 432D	SSM	16511-43281
R334	RR1220P 471D	SSM	16511-47181
R335	RR1220P 101D	SSM	16511-10181
R336	RR1220P 104D	SSM	16511-10481
R337	RR1220P 393D	SSM	16511-39381
R338	RR1220P 473D	SSM	16511-47381
R339	RR1220P 472D	SSM	16511-47281
R340	RMC 1/10 150KΩ F	KMY	16511-15481
R341	RR1220P 103D	SSM	16511-10381
R342	RR1220P 104D	SSM	16511-10481
R343	RR1220P 101D	SSM	16511-10181
R345	RR1220P 751D	SSM	16511-75181
R346	RR1220P 101D	SSM	16511-10181
R347	RR1220P 102D	SSM	16511-10281
R348	RR1220P 332D	SSM	16511-33281
R349	RR1220P 102D	SSM	16511-10281
R350	RR1220P 471D	SSM	16511-47181
R351	RR1220P 222D	SSM	16511-22281
R352	RR1220P 101D	SSM	16511-10181
R353	RR1220P 622D	SSM	16511-62281
R354	RR1220P 103D	SSM	16511-10381
R355	RR1220P 101D	SSM	16511-10181
R356	RR1220P 472D	SSM	16511-47281
R357	RR1220P 393D	SSM	16511-39381
R358	RR1220P 473D	SSM	16511-47381
R359	RR1220P 472D	SSM	16511-47281
R360	RMC 1/10 150KΩ F	KMY	16511-15481
R361	RR1220P 103D	SSM	16511-10381
R362	RR1220P 104D	SSM	16511-10481
R363	RR1220P 332D	SSM	16511-33281
R364	RR1220P 432D	SSM	16511-43281
R365	RR1220P 222D	SSM	16511-22281

<NETWORK RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
RP1	M9-1-104J	BEC	19032-91104
RP2	M9-1-104J	BEC	19032-91104

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C1	ECEA 1CK 101 B	MAT	20128-10716
C2	CM21W5R 473M 25VB T S4	KYC	26062-47325
C3	ECEA 1CKA 470 B	MAT	20129-47616
C4	CM21W5R 473M 25VB T S4	KYC	26062-47325
C5	ECEA 1EK 100 B	MAT	20128-10616
C6	ECEA 1EK 100 B	MAT	20128-10616
C7	CM21CH 680J 25VB T W1	KYC	26061-68025
C8	CM21CH 220J 25VB T J1	KYC	26061-22025
C9	ECEA 1EK 100 B	MAT	20128-10616
C10	CM32W5R 104M 25VB T A5	KYC	26063-10425
C11	CM21W5R 473M 25VB T S4	KYC	26062-47325
C12	CM32W5R 104M 25VB T A5	KYC	26063-10425
C13	CM21CH 221J 25VB T J2	KYC	26061-22125

****
* 20/30SERIES *
* INTERFACE BOARD *
****

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C14	CM21CH 101J 25VB T A2	KYC	26061-10125
C15	CM21CH 470J 25VB T S1	KYC	26061-47025
C16	CM21CH 220J 25VB T J1	KYC	26061-22025
C17	CM21CH 102J 25VB T A3	KYC	26061-10225
C18	CM21CH 101J 25VB T A2	KYC	26061-10125
C19	CM21CH 101J 25VB T A2	KYC	26061-10125
C20	ECQ-B1H 682 JZ4	MAT	22136-68250
C21	CM21CH 471J 25VB T S2	KYC	26061-47125
C22	CM21CH 102J 25VB T A3	KYC	26061-10225
C23	CM21CH 102J 25VB T A3	KYC	26061-10225
C24	ECEA 1HKG 010 B	MAT	20136-10550
C25	CM43CH 222M 25VB T J3	KYC	26064-22225
C26	CM21W5R 473M 25VB T S4	KYC	26062-47325
C27	CM21CH 101J 25VB T A2	KYC	26061-10125
C28	CM43CH 222M 25VB T J3	KYC	26064-22225
C29	CM21CH 151J 25VB T E2	KYC	26061-15125
C30	CM21CH 102J 25VB T A3	KYC	26061-10225
C31	ECEA 1HKG 010 B	MAT	20136-10550
C32	ECEA 1HKG 010 B	MAT	20136-10550
C33	ECEA 1CKA 470 B	MAT	20129-47616
C34	ECEA 1CKA 470 B	MAT	20129-47616
C35	267M 1602 335MR	NCC	26821-33516
C36	ECEA 1CK 101 B	MAT	20128-10716
C37	CM21W5R 473M 25VB T S4	KYC	26062-47325
C38	CM21W5R 473M 25VB T S4	KYC	26062-47325
C39	CM21W5R 473M 25VB T S4	KYC	26062-47325
C40	CM21W5R 473M 25VB T S4	KYC	26062-47325
C41	CM21W5R 473M 25VB T S4	KYC	26062-47325
C42	CM21W5R 473M 25VB T S4	KYC	26062-47325
C43	CM21W5R 473M 25VB T S4	KYC	26062-47325
C44	CM21W5R 473M 25VB T S4	KYC	26062-47325
C45	CM21W5R 473M 25VB T S4	KYC	26062-47325
C46	CM21W5R 473M 25VB T S4	KYC	26062-47325
C47	CM21W5R 473M 25VB T S4	KYC	26062-47325
C48	CM21W5R 473M 25VB T S4	KYC	26062-47325
C49	CM21W5R 473M 25VB T S4	KYC	26062-47325
C50	CM21W5R 473M 25VB T S4	KYC	26062-47325
C51	CM21W5R 473M 25VB T S4	KYC	26062-47325
C52	CM21W5R 473M 25VB T S4	KYC	26062-47325
C53	CM21W5R 473M 25VB T S4	KYC	26062-47325
C54	CM21W5R 473M 25VB T S4	KYC	26062-47325
C55	CM21W5R 473M 25VB T S4	KYC	26062-47325
C56	CM21W5R 473M 25VB T S4	KYC	26062-47325
C57	CM21W5R 473M 25VB T S4	KYC	26062-47325
C58	CM21W5R 473M 25VB T S4	KYC	26062-47325
C59	CM21W5R 473M 25VB T S4	KYC	26062-47325
C60	CM21W5R 473M 25VB T S4	KYC	26062-47325
C61	CM21W5R 473M 25VB T S4	KYC	26062-47325
C62	CM21W5R 473M 25VB T S4	KYC	26062-47325
C63	CM21W5R 473M 25VB T S4	KYC	26062-47325
C64	CM21CH 470J 25VB T S1	KYC	26061-47025
C65	ECEA 1CK 101 B	MAT	20128-10716
C201	CM21W5R 473M 25VB T S4	KYC	26062-47325
C202	CM21CH 470J 25VB T S1	KYC	26061-47025
C203	ECEA 1EK 100 B	MAT	20128-10616
C205	ECEA 1CK 101 B	MAT	20128-10716
C206	CM21W5R 473M 25VB T S4	KYC	26062-47325
C207	CM21W5R 473M 25VB T S4	KYC	26062-47325
C208	CM21CH 470J 25VB T S1	KYC	26061-47025
C209	ECEA 1EK 100 B	MAT	20128-10616
C210	CM21W5R 473M 25VB T S4	KYC	26062-47325
C301	ECEA 1CK 101 B	MAT	20128-10716
C302	CM21W5R 473M 25VB T S4	KYC	26062-47325
C303	ECEA 1CK 101 B	MAT	20128-10716
C304	CM21W5R 473M 25VB T S4	KYC	26062-47325
C305	ECEA 1CK 101 B	MAT	20128-10716
C306	ECEA 1CKA 470 B	MAT	20129-47616
C307	ECEA 1HU 220 B	MAT	20132-22050
C308	※		
C309	ECEA 1HU 220 B	MAT	20132-22050
C310	ECEA 1CK 101 B	MAT	20128-10716
C311	ECEA 1CKA 470 B	MAT	20129-47616
C312	ECEA 1HU 220 B	MAT	20132-22050

<INDUCTANCE COILS>

No.	DESCRIPTION	MFD.	PARTS – CODE
L1	TSL0707-101KR66	TDK	40586-00103
L2	TSL0707-101KR66	TDK	40586-00103
L3	TSL0707-101KR66	TDK	40586-00103
L201	380KB-330J=P	TKO	39402-33000
L202	380KB-330J=P	TKO	39402-33000

<CONNECTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
J3	PCN10A-50P-2.54DS	HIR	30333-09500
J4	PCN10A-50P-2.54DS	HIR	30333-09500

<TEST POINTS>

No.	DESCRIPTION	MFD.	PARTS – CODE
TP1	HK-2-G	MAC	39510-00200
TP2	HK-2-G	MAC	39510-00200
TP3	HK-2-G	MAC	39510-00200
TP4	HK-2-G	MAC	39510-00200
TP5	HK-2-G	MAC	39510-00200
TP6	HK-2-G	MAC	39510-00200
TP7	HK-2-G	MAC	39510-00200
TP8	HK-2-G	MAC	39510-00200
TP9	HK-2-G	MAC	39510-00200
TP10	HK-2-G	MAC	39510-00200
TP11	HK-2-G	MAC	39510-00200
TP12	HK-2-G	MAC	39510-00200
TP13	HK-2-G	MAC	39510-00200
TP14	HK-2-G	MAC	39510-00200
TP15	HK-2-G	MAC	39510-00200
TP16	HK-2-G	MAC	39510-00200
TP17	HK-2-G	MAC	39510-00200

<TEST POINTS>

No.	DESCRIPTION	MFD.	PARTS – CODE
TP201	HK-2-G	MAC	39510-00200
TP202	HK-2-G	MAC	39510-00200
TP203	HK-2-G	MAC	39510-00200
TP301	HK-2-G	MAC	39510-00200
TP302	HK-2-G	MAC	39510-00200
TP303	HK-2-G	MAC	39510-00200
TP304	HK-2-G	MAC	39510-00200
TP305	HK-2-G	MAC	39510-00200
TP306	HK-2-G	MAC	39510-00200
TP307	HK-2-G	MAC	39510-00200

20/30SERIES
PRE DECO(N) BOARD

<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD.	PARTS – CODE
IC1	LA7016	SYO	01333-00600
IC2	MN3814	MAT	01366-03810
IC3	NJM78L05A	JRC	01392-00301
IC4	MN3109	MAT	01366-03100
IC5	NJM78L09A	JRC	01392-00304
IC7	LA7016	SYO	01333-00600
IC8	LA7016	SYO	01333-00600
IC9	LA7016	SYO	01333-00600

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr1	2SC1815Y-TPE2	TOS	02824-05702
Tr2	2SC1815Y-TPE2	TOS	02824-05702
Tr3	2SC1815Y-TPE2	TOS	02824-05702
Tr4	2N3904	NEC	02821-00600
Tr5	2N3906	NEC	02821-00700
Tr6	2SC1815Y-TPE2	TOS	02824-05702
Tr7	2SC1815Y-TPE2	TOS	02824-05702
Tr8	2SC1815Y-TPE2	TOS	02824-05702
Tr9	2SC1815Y-TPE2	TOS	02824-05702
Tr10	2SA1015Y-TPE2	TOS	02822-05402
Tr11	2SA1015Y-TPE2	TOS	02822-05402
Tr12	2N3904	NEC	02821-00600
Tr13	2SC1815Y-TPE2	TOS	02824-05702
Tr14	2SC1815Y-TPE2	TOS	02824-05702
Tr15	2N3904	NEC	02821-00600
Tr16	2N3904	NEC	02821-00600
Tr17	2SA1015Y-TPE2	TOS	02822-05402
Tr18	2SC1815Y-TPE2	TOS	02824-05702
Tr19	2SC1815Y-TPE2	TOS	02824-05702
Tr20	2N3904	NEC	02821-00600
Tr22	2SA1015Y-TPE2	TOS	02822-05402
Tr23	2SC1815Y-TPE2	TOS	02824-05702
Tr24	2N3904	NEC	02821-00600
Tr25	2SC1815Y-TPE2	TOS	02824-05702
Tr29	2SC1815Y-TPE2	TOS	02824-05702
Tr30	2SC1815Y-TPE2	TOS	02824-05702
Tr31	2SC1815Y-TPE2	TOS	02824-05702
Tr32	2SC1815Y-TPE2	TOS	02824-05702
Tr33	2SC1815Y-TPE2	TOS	02824-05702
Tr34	2SC1815Y-TPE2	TOS	02824-05702
Tr35	2SC1815Y-TPE2	TOS	02824-05702

<DIODE>

No.	DESCRIPTION	MFD.	PARTS – CODE
D1	1S1588-TPB2	TOS	03812-01201

<VARIABLE RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VR1	GF06UT2 1KΩ	COS	15194-10200
VR2	GF06UT2 5KΩ	COS	15194-50200
VR3	GF06UT2 2KΩ	COS	15194-20200
VR4	GF06UT2 1KΩ	COS	15194-10200
VR5	GF06UT2 1KΩ	COS	15194-10200
VR7	GF06UT2 1KΩ	COS	15194-10200
VR8	GF06UT2 5KΩ	COS	15194-50200
VR9	GF06UT2 1KΩ	COS	15194-10200
VR10	GF06UT2 10KΩ	COS	15194-10300
VR11	GF06UT2 1KΩ	COS	15194-10200
VR12	GF06UT2 1KΩ	COS	15194-10200
VR13	GF06UT2 2KΩ	COS	15194-20200
VR14	GF06UT2 5KΩ	COS	15194-50200

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R1	RN26C 2C 1000Ω FT	KOA	10357-10281
R2	RN26C 2C 220KΩ FT	KOA	10357-22481
R3	RN26C 2C 18KΩ FT	KOA	10357-18381
R4	RN26C 2C 1500Ω FT	KOA	10357-15281
R5	RN26C 2C 4700Ω FT	KOA	10357-47281
R6	RN26C 2C 100Ω FT	KOA	10357-10181
R7	RN26C 2C 1000Ω FT	KOA	10357-10281
R8	RN26C 2C 4700Ω FT	KOA	10357-47281
R9	LF1/8 270Ω F-TP	TAM	10220-27101
R10	LF1/8 150Ω F-TP	TAM	10220-15101
R11	RN26C 2C 2200Ω FT	KOA	10357-22281
R12	RN26C 2C 4700Ω FT	KOA	10357-47281
R13	RN26C 2C 6800Ω FT	KOA	10357-68281
R14	RN26C 2C 22KΩ FT	KOA	10357-22381
R15	LF1/8 750Ω F-TP	TAM	10220-75101
R16	RN26C 2C 560Ω FT	KOA	10357-56181
R17	LF1/8 22Ω F-TP	TAM	10220-22001
R18	RN26C 2C 100Ω FT	KOA	10357-10181
R19	LF1/8 2700Ω F-TP	TAM	10220-27201
R20	RN26C 2C 10KΩ FT	KOA	10357-10381
R21	RN26C 2C 2200Ω FT	KOA	10357-22281
R22	RN26C 2C 4700Ω FT	KOA	10357-47281
R23	RN26C 2C 1000Ω FT	KOA	10357-10281
R24	RN26C 2C 2200Ω FT	KOA	10357-22281
R25	RN26C 2C 4700Ω FT	KOA	10357-47281
R26	RN26C 2C 1000Ω FT	KOA	10357-10281
R27	RN26C 2C 4700Ω FT	KOA	10357-47281
R28	ERDS1VJ 100T	MAT	12106-10033
R29	ERDS1VJ 100T	MAT	12106-10033
R30	RN26C 2E 1MΩ FT	KOA	10355-10511
R31	RN26C 2C 4700Ω FT	KOA	10357-47281
R32	RN26C 2C 1000Ω FT	KOA	10357-10281
R33	RN26C 2C 100Ω FT	KOA	10357-10181
R34	RN26C 2C 2200Ω FT	KOA	10357-22281
R35	RN26C 2C 680Ω FT	KOA	10357-68181
R36	RN26C 2C 1800Ω FT	KOA	10357-18281
R37	LF1/8 750Ω F-TP	TAM	10220-75101
R38	RN26C 2C 10KΩ FT	KOA	10357-10381
R39	RN26C 2C 10KΩ FT	KOA	10357-10381
R40	RN26C 2C 1500Ω FT	KOA	10357-15281
R41※			
R42	LF1/8 750Ω F-TP	TAM	10220-75101
R43	RN26C 2C 100Ω FT	KOA	10357-10181
R44	RN26C 2C 470Ω FT	KOA	10357-47181
R45	RN26C 2C 470Ω FT	KOA	10357-47181
R46	RN26C 2C 1500Ω FT	KOA	10357-15281
R48	RN26C 2C 330Ω FT	KOA	10357-33181
R49	RN26C 2C 3300Ω FT	KOA	10357-33281
R50	RN26C 2C 330Ω FT	KOA	10357-33181
R51	RN26C 2C 4700Ω FT	KOA	10357-47281
R52	ERDS1VJ 100T	MAT	12106-10033
R53	ERDS1VJ 100T	MAT	12106-10033
R54	LF1/8 510Ω F-TP	TAM	10220-51101
R55	LF1/8 510Ω F-TP	TAM	10220-51101
R56	RN26C 2C 1500Ω FT	KOA	10357-15281
R57	RN26C 2C 3300Ω FT	KOA	10357-33281
R58	RN26C 2C 470Ω FT	KOA	10357-47181
R59	RN26C 2C 100Ω FT	KOA	10357-10181
R60	RN26C 2C 1500Ω FT	KOA	10357-15281
R61	RN26C 2C 3300Ω FT	KOA	10357-33281
R62	RN26C 2C 3300Ω FT	KOA	10357-33281
R63	LF1/8 510Ω F-TP	TAM	10220-51101
R64	RN26C 2C 4700Ω FT	KOA	10357-47281
R65	LF1/8 510Ω F-TP	TAM	10220-51101
R66	RN26C 2C 4700Ω FT	KOA	10357-47281
R72	RN26C 2C 1000Ω FT	KOA	10357-10281
R73	RN26C 2C 1000Ω FT	KOA	10357-10281
R77	RN26C 2C 1000Ω FT	KOA	10357-10281
R78	RN26C 2C 10KΩ FT	KOA	10357-10381
R79	RN26C 2C 4700Ω FT	KOA	10357-47281
R80	RN26C 2C 1000Ω FT	KOA	10357-10281
R81	RN26C 2C 100Ω FT	KOA	10357-10181
R82	RN26C 2C 100Ω FT	KOA	10357-10181
R83	RN26C 2C 1000Ω FT	KOA	10357-10281
R84	RN26C 2C 1000Ω FT	KOA	10357-10281
R85	RN26C 2C 1000Ω FT	KOA	10357-10281
R87	RN26C 2C 100Ω FT	KOA	10357-10181
R88	RN26C 2C 6800Ω FT	KOA	10357-68281
R89	RN26C 2C 1000Ω FT	KOA	10357-10281
R90	RN26C 2C 33KΩ FT	KOA	10357-33381
R96	ERDS1VJ 100T	MAT	12106-10033
R97	ERDS1VJ 100T	MAT	12106-10033
R98	RN26C 2C 4700Ω FT	KOA	10357-47281
R99	RN26C 2C 10KΩ FT	KOA	10357-10381
R100	RN26C 2C 2200Ω FT	KOA	10357-22281
R101	RN26C 2C 4700Ω FT	KOA	10357-47281
R102	RN26C 2C 2200Ω FT	KOA	10357-22281
R103	RN26C 2C 470Ω FT	KOA	10357-47181
R104	RN26C 2C 4700Ω FT	KOA	10357-47281
R105	RN26C 2C 1000Ω FT	KOA	10357-10281
R106	RN26C 2C 100Ω FT	KOA	10357-10181
R107	RN26C 2C 100Ω FT	KOA	10357-10181
R108	RN26C 2C 2200Ω FT	KOA	10357-22281
R109	RN26C 2C 10KΩ FT	KOA	10357-10381
R110	RN26C 2C 4700Ω FT	KOA	10357-47281
R111	RN26C 2C 100Ω FT	KOA	10357-10181
R112	RN26C 2C 4700Ω FT	KOA	10357-47281
R113	RN26C 2C 2200Ω FT	KOA	10357-22281
R114	RN26C 2C 1000Ω FT	KOA	10357-10281
R115	RN26C 2C 4700Ω FT	KOA	10357-47281
R116	RN26C 2C 1000Ω FT	KOA	10357-10281

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VC1	HE40SJWK 330K	KCK	24213-33050
C1	ECEA 1EU 330B	MAT	20123-33625
C2	DM 05C 620 J3	SOS	23097-62050
C3	DM 05C 070 D3	SOS	23097-07050
C4	NP 2D 181 JT	TYO	22393-18177
C5	NP 2D 121 JT	TYO	22393-12177
C6	ECQ-B1H 102 JZ4	MAT	22136-10250
C7	DM 05C 100 D3	SOS	23097-10050
C8	DM 05C 390 J3	SOS	23097-39050
C9	ECQ-B1H 103 JZ4	MAT	22136-10350
C10※			
C11	ECQ-V1H 104 JZ2	MAT	22137-10450
C12	ECEA 1EU 470B	MAT	20123-47625
C13	ECQ-V1H 104 JZ2	MAT	22137-10450
C14	ECEA 1EU 470B	MAT	20123-47625
C15	ECQ-B1H 103 JZ4	MAT	22136-10350
C16	ECQ-V1H 104 JZ2	MAT	22137-10450
C17	ECQ-V1H 104 JZ2	MAT	22137-10450
C18	ECQ-V1H 104 JZ2	MAT	22137-10450
C19	ECQ-V1H 104 JZ2	MAT	22137-10450
C20	ECQ-B1H 103 JZ4	MAT	22136-10350
C21	ECQ-B1H 103 JZ4	MAT	22136-10350
C22	ECQ-B1H 472 JZ4	MAT	22136-47250
C23	ECQ-V1H 472 JZ2	MAT	22137-47250
C24	ECEA 1JU 100B	MAT	20123-10663
C25	ECQ-V1H 104 JZ2	MAT	22137-10450
C26	ECEA 1JU 100B	MAT	20123-10663
C27	ECEA 1JU 100B	MAT	20123-10663
C28	DM 05C 360 J3	SOS	23097-36050
C29	DM 05C 680 J3	SOS	23097-68050
C30※			
C31	ECEA 1JU 100B	MAT	20123-10663
C33	ECQ-V1H 104 JZ2	MAT	22137-10450
C34	ECEA 1EU 470B	MAT	20123-47625
C35	ECQ-V1H 104 JZ2	MAT	22137-10450
C36	ECEA 1EU 470B	MAT	20123-47625
C37※	DM 05C 100 D3	SOS	23097-10050
C38	ECEA 1EU 101B	MAT	20123-10725
C39	ECEA 1EU 470B	MAT	20123-47625
C40	ECQ-V1H 104 JZ2	MAT	22137-10450
C41	DM 05C 560 J3	SOS	23097-56050
C42	ECEA 1JU 100B	MAT	20123-10663
C43	ECEA 1EU 470B	MAT	20123-47625
C44	DM 05C 150 J3	SOS	23097-15050
C45	DM 05C 150 J3	SOS	23097-15050
C46	ECEA 1JU 100B	MAT	20123-10663
C47	DM 05C 470 J3	SOS	23097-47050
C48	ECEA 1EU 330B	MAT	20123-33625
C49	ECEA 1EU 330B	MAT	20123-33625
C50	ECEA 1EU 330B	MAT	20123-33625
C51	ECQ-V1H 104 JZ2	MAT	22137-10450

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• 20/30SERIES •
• PRE DECO(N) BOARD •
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No.	DESCRIPTION	MFD.	PARTS – CODE
<CAPACITORS>			
C52	ECEA 1EU 470B	MAT	20123-47625
C53	ECQ-V1H 104 JZ2	MAT	22137-10450
C54	ECEA 1EU 470B	MAT	20123-47625
C55	ECQ-B1H 103 JZ4	MAT	22136-10350
C56	DM 05C 680 J3	SOS	23097-68050
C57	ECQ-B1H 103 JZ4	MAT	22136-10350
C58	ECQ-B1H 103 JZ4	MAT	22136-10350
C59	ECEA 1JU 100B	MAT	20123-10663
<COILS>			
L1	ST-9654	IKE	40995-96540
L2	ST-9624	IKE	40995-96240
L3	LF7.5-560K	KOA	40337-56000
L4	LF7.5-270K	KOA	40337-27000
L5※			
L6	LF7.5-390K	KOA	40337-39000
L7	LF7.5-4R7K	KOA	40337-04700
L8	P-680	SUD	40451-68000
L9	LF7.5-100K	KOA	40337-10000
L10	ST-9624	IKE	40995-96240
<DELAY LINES>			
DL1	CN100	SWC	44062-00100
DL2	ST-901432	SWC	44995-14320
DL3	ZDL-850	SWC	44754-00400
<CONNECTORS>			
J6	PCN10A-50P-2.54DS	HIR	30333-09500
CN1	14120-01-445	SCT	54003-00100
<TEST POINTS>			
TP1	TBPS	IKE	
TP2	TBPS	IKE	
TP3	TBPS	IKE	
TP4	TBPS	IKE	
TP5	TBPS	IKE	
TP6	TBPS	IKE	

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• 20/30SERIES •
• PRE SUB BOARD •
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No.	DESCRIPTION	MFD.	PARTS – CODE
<TRANSISTORS>			
Tr36	2SC1623-L6,7	NEC	05824-00100
Tr37	2SC1623-L6,7	NEC	05824-00100
Tr38	2SC1623-L6,7	NEC	05824-00100
Tr39	2SC1623-L6,7	NEC	05824-00100
<RESISTORS>			
R117	RR1220P 122D	SSM	16511-12281
R118	RR1220P 222D	SSM	16511-22281
R119	RR1220P 332D	SSM	16511-33281
R120	RR1220P 153D	SSM	16511-15381
R121	RR1220P 222D	SSM	16511-22281
R122	RR1220P 222D	SSM	16511-22281
R123	RR1220P 222D	SSM	16511-22281
R124	RR1220P 102D	SSM	16511-10281
R125	RR1220P 222D	SSM	16511-22281
R126	RR1220P 222D	SSM	16511-22281
<CAPACITORS>			
C60※	CM21CH 220J 25VA T J1	KYC	26061-22025
C61	GRM40B 104M 25M6305-R	MUR	26183-10425
<CONNECTOR>			
CN1	14120-04-451	SCT	54003-00200
<TEST POINTS>			
TP7	HK-2-G	MAC	39510-00200
TP8	HK-2-G	MAC	39510-00200

<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD.	PARTS – CODE
IC1	LA7016	SYO	01333-00600
IC2	μ PD4053BC	NEC	01784-23000
IC3	MC1496P	MOT	01363-01002
IC4	μ PD4053BC	NEC	01784-23000
IC5	μ PC4082C	NEC	01783-01760
IC6	MC1495L	MOT	01363-00900
IC7	MC1496P	MOT	01363-01002
IC8	μ PC4082C	NEC	01783-01760
IC9	μ PC4082C	NEC	01783-01760

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr1	2SC1815Y-TPE2	TOS	02824-05702
Tr2	2SC1815Y-TPE2	TOS	02824-05702
Tr3	2SC1815Y-TPE2	TOS	02824-05702
Tr4	2SA1015Y-TPE2	TOS	02822-05402
Tr5	2SK192A-GR	TOS	02828-01181
Tr6	2SA1015Y-TPE2	TOS	02822-05402
Tr7	2SA1015Y-TPE2	TOS	02822-05402
Tr8	2SA1015Y-TPE2	TOS	02822-05402
Tr9	2SA1015Y-TPE2	TOS	02822-05402
Tr10	2SC1815Y-TPE2	TOS	02824-05702
Tr11	2SC2901	NEC	02824-08500
Tr12	2SA1015Y-TPE2	TOS	02822-05402
Tr13	2SC1815Y-TPE2	TOS	02824-05702
Tr14	2SA1015Y-TPE2	TOS	02822-05402
Tr15	2SC1815Y-TPE2	TOS	02824-05702
Tr16	2SC1815Y-TPE2	TOS	02824-05702
Tr17	2N3904	NEC	02821-00600
Tr18	2SC1815Y-TPE2	TOS	02824-05702
Tr19	2SA1015Y-TPE2	TOS	02822-05402
Tr20	2SA1015Y-TPE2	TOS	02822-05402
Tr23	2N3904	NEC	02821-00600
Tr24	2SA1015Y-TPE2	TOS	02822-05402
Tr25	2N3904	NEC	02821-00600
Tr26	2SC1815Y-TPE2	TOS	02824-05702
Tr27	2SC1815Y-TPE2	TOS	02824-05702
Tr28	2SA1015Y-TPE2	TOS	02822-05402
Tr29	2SA1015Y-TPE2	TOS	02822-05402
Tr32	2N3904	NEC	02821-00600
Tr33	2SA1015Y-TPE2	TOS	02822-05402
Tr34	2SC1815Y-TPE2	TOS	02824-05702
Tr35	2SC1815Y-TPE2	TOS	02824-05702
Tr36	2SA1015Y-TPE2	TOS	02822-05402
Tr37	2SC1815Y-TPE2	TOS	02824-05702
Tr38	2SC1815Y-TPE2	TOS	02824-05702
Tr39	2SA1015Y-TPE2	TOS	02822-05402
Tr40	2SC1815Y-TPE2	TOS	02824-05702
Tr41	2SC1815Y-TPE2	TOS	02824-05702
Tr42	2SA1015Y-TPE2	TOS	02822-05402
Tr43	2SC1815Y-TPE2	TOS	02824-05702

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D1	FC53M	FJT	03155-00100
D2	1S1588-TPB2	TOS	03812-01201
D3	1S1588-TPB2	TOS	03812-01201
D4	1S1588-TPB2	TOS	03812-01201

<VARIABLE RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VR1	GF06UT2 100Ω	COS	15194-10100
VR2	GF06UT2 500Ω	COS	15194-50100
VR3	GF06X 50KΩ	COS	15187-50300
VR4	GF06X 50KΩ	COS	15187-50300
VR5	GF06UT2 1KΩ	COS	15194-10200
VR6	GF06UT2 20KΩ	COS	15194-20300
VR7	GF06UT2 50KΩ	COS	15194-50300
VR8	GF06UT2 1KΩ	COS	15194-10200
VR9	GF06UT2 50KΩ	COS	15194-50300
VR10	GF06X 50KΩ	COS	15187-50300
VR11	GF06X 20KΩ	COS	15187-20300
VR12	GF06UT2 200KΩ	COS	15194-20400

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R1	RN26C 2C 1000Ω F T	KOA	10357-10281
R2	RN26C 2C 10KΩ F T	KOA	10357-10381
R3	RN26C 2C 3900Ω F T	KOA	10357-39281
R4	RN26C 2C 470Ω F T	KOA	10357-47181
R5	RN26C 2C 470Ω F T	KOA	10357-47181
R6	RN26C 2C 3900Ω F T	KOA	10357-39281
R7	RN26C 2C 1000Ω F T	KOA	10357-10281
R8	RN26C 2C 4700Ω F T	KOA	10357-47281
R9	RN26C 2C 10KΩ F T	KOA	10357-10381
R10	RN26C 2C 33KΩ F T	KOA	10357-33381
R11	RN26C 2C 100Ω F T	KOA	10357-10181
R12	RN26C 2C 10KΩ F T	KOA	10357-10381
R13	※RN26C 2C 10KΩ F T	KOA	10357-10381
R14	RN26C 2C 330Ω F T	KOA	10357-33181
R15	RN26C 2C 220Ω F T	KOA	10357-22181
R17	RN26C 2C 330Ω F T	KOA	10357-33181
R18	RN26C 2C 47Ω F T	KOA	10357-47081
R19	RN26C 2C 100Ω F T	KOA	10357-10181
R20	RN26C 2C 10KΩ F T	KOA	10357-10381
R21	RN26C 2C 2200Ω F T	KOA	10357-22281
R22	RN26C 2C 100Ω F T	KOA	10357-10181
R23	RN26C 2C 2200Ω F T	KOA	10357-22281
R24	RN26C 2C 10KΩ F T	KOA	10357-10381
R25	RN26C 2C 1500Ω F T	KOA	10357-15281
R26	※RN26C 2C 330Ω F T	KOA	10357-33181
R27	RN26C 2C 1500Ω F T	KOA	10357-15281
R29	RN26C 2C 100Ω F T	KOA	10357-10181
R30	RN26C 2C 2200Ω F T	KOA	10357-22281
R32	RN26C 2C 68KΩ F T	KOA	10357-68381
R34	RN26C 2C 10KΩ F T	KOA	10357-10381
R35	RN26C 2C 100Ω F T	KOA	10357-10181
R36	RN26C 2C 1000Ω F T	KOA	10357-10281
R37	RN26C 2C 4700Ω F T	KOA	10357-47281
R38	RN26C 2C 1000Ω F T	KOA	10357-10281
R39	RN26C 2C 33KΩ F T	KOA	10357-33381

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R40	RN26C 2C 10KΩ F T	KOA	10357-10381
R41	RN26C 2C 680Ω F T	KOA	10357-68181
R42	RN26C 2C 47KΩ F T	KOA	10357-47381
R43	RN26C 2C 3300Ω F T	KOA	10357-33281
R44	RN26C 2C 10KΩ F T	KOA	10357-10381
R45	RN26C 2C 10KΩ F T	KOA	10357-10381
R46	RN26C 2C 3300Ω F T	KOA	10357-33281
R47	RN26C 2C 1000Ω F T	KOA	10357-10281
R48	RN26C 2C 470Ω F T	KOA	10357-47181
R49	RN26C 2C 2200Ω F T	KOA	10357-22281
R50	RN26C 2C 2200Ω F T	KOA	10357-22281
R51	RN26C 2C 1000Ω F T	KOA	10357-10281
R52	RN26C 2C 100Ω F T	KOA	10357-10181
R53	RN26C 2C 8200Ω F T	KOA	10357-82281
R54	RN26C 2C 100Ω F T	KOA	10357-10181
R55	RN26C 2C 1500Ω F T	KOA	10357-15281
R56	RN26C 2C 2200Ω F T	KOA	10357-22281
R57	RN26C 2C 2200Ω F T	KOA	10357-22281
R58	RN26C 2C 4700Ω F T	KOA	10357-47281
R67	RN26C 2C 68KΩ F T	KOA	10357-68381
R69	RN26C 2C 10KΩ F T	KOA	10357-10381
R70	RN26C 2C 3300Ω F T	KOA	10357-33281
R71	RN26C 2C 3300Ω F T	KOA	10357-33281
R72	RN26C 2C 1000Ω F T	KOA	10357-10281
R73	RN26C 2C 220KΩ F T	KOA	10357-22481
R74	RN26C 2C 2200Ω F T	KOA	10357-22281
R75	RN26C 2C 220KΩ F T	KOA	10357-22481
R76	RN26C 2C 22KΩ F T	KOA	10357-22381
R77	RN26C 2C 47KΩ F T	KOA	10357-47381
R78	RN26C 2C 2200Ω F T	KOA	10357-22281
R79	RN26C 2C 2200Ω F T	KOA	10357-22281
R80	RN26C 2C 1500Ω F T	KOA	10357-15281
R81	RN26C 2C 10KΩ F T	KOA	10357-10381
R82	RN26C 2C 10KΩ F T	KOA	10357-10381
R83	RN26C 2C 10KΩ F T	KOA	10357-10381
R84	RN26C 2C 3300Ω F T	KOA	10357-33281
R85	RN26C 2C 3300Ω F T	KOA	10357-33281
R86	RN26C 2C 10KΩ F T	KOA	10357-10381
R87	RN26C 2C 10KΩ F T	KOA	10357-10381
R88	RN26C 2C 820Ω F T	KOA	10357-82181
R89	RN26C 2C 1000Ω F T	KOA	10357-10281
R90	RN26C 2C 10KΩ F T	KOA	10357-10381
R91	ERD S1VJ 2R2 T	MAT	12106-02233
R92	ERD S1VJ 2R2 T	MAT	12106-02233
R93	RN26C 2C 47KΩ F T	KOA	10357-47381
R94	RN26C 2C 22KΩ F T	KOA	10357-22381
R95	RN26C 2C 3300Ω F T	KOA	10357-33281
R96	RN26C 2E 1MΩ F T	KOA	10355-10511
R97	RN26C 2C 47KΩ F T	KOA	10357-47381
R98	RN26C 2C 47Ω F T	KOA	10357-47081
R99	RN26C 2C 2200Ω F T	KOA	10357-22281
R100	RN26C 2C 4700Ω F T	KOA	10357-47281
R101	RN26C 2C 3300Ω F T	KOA	10357-33281
R102	RN26C 2C 1000Ω F T	KOA	10357-10281
R103	RN26C 2C 1000Ω F T	KOA	10357-10281
R104	RN26C 2C 2200Ω F T	KOA	10357-22281
R105	RN26C 2C 680Ω F T	KOA	10357-68181
R106	RN26C 2C 680Ω F T	KOA	10357-68181
R107	RN26C 2C 1000Ω F T	KOA	10357-10281
R108	RN26C 2C 1000Ω F T	KOA	10357-10281
R109	RN26C 2C 4700Ω F T	KOA	10357-47281
R110	RN26C 2C 6800Ω F T	KOA	10357-68281
R111	RN26C 2C 470Ω F T	KOA	10357-47181
R112	RN26C 2C 2200Ω F T	KOA	10357-22281
R113	RN26C 2C 2200Ω F T	KOA	10357-22281
R114	RN26C 2C 100Ω F T	KOA	10357-10181
R115	RN26C 2C 8200Ω F T	KOA	10357-82281
R116	RN26C 2C 100Ω F T	KOA	10357-10181
R117	RN26C 2C 1000Ω F T	KOA	10357-10281
R118	RN26C 2C 2200Ω F T	KOA	10357-22281
R119	RN26C 2C 2200Ω F T	KOA	10357-22281
R120	RN26C 2C 4700Ω F T	KOA	10357-47281
R129	RN26C 2C 68KΩ F T	KOA	10357-68381
R131	RN26C 2C 10KΩ F T	KOA	10357-10381
R132	RN26C 2C 3300Ω F T	KOA	10357-33281
R133	RN26C 2C 3300Ω F T	KOA	10357-33281
R134	RN26C 2C 1000Ω F T	KOA	10357-10281
R135	RN26C 2C 220KΩ F T	KOA	10357-22481
R136	RN26C 2C 4700Ω F T	KOA	10357-47281
R137	RN26C 2C 33KΩ F T	KOA	10357-33381
R138	RN26C 2C 22KΩ F T	KOA	10357-22381
R139	RN26C 2C 10KΩ F T	KOA	10357-10381
R140	RN26C 2C 10KΩ F T	KOA	10357-10381
R141	RN26C 2C 10KΩ F T	KOA	10357-10381
R142	RN26C 2C 1000Ω F T	KOA	10357-10281
R143	RN26C 2C 22KΩ F T	KOA	10357-22381
R144	RN26C 2C 10KΩ F T	KOA	10357-10381
R145	RN26C 2C 22KΩ F T	KOA	10357-22381
R146	RN26C 2C 68KΩ F T	KOA	10357-68381
R147	RN26C 2C 10KΩ F T	KOA	10357-10381
R148	RN26C 2C 470Ω F T	KOA	10357-47181
R149	RN26C 2C 100KΩ F T	KOA	10357-10481
R150	RN26C 2C 22KΩ F T	KOA	10357-22381
R151	RN26C 2C 33KΩ F T	KOA	10357-33381
R152	RN26C 2C 5600Ω F T	KOA	10357-56281
R153	RN26C 2C 3300Ω F T	KOA	10357-33281
R154	RN26C 2C 100Ω F T	KOA	10357-10181
R155	RN26C 2C 47KΩ F T	KOA	10357-47381
R156	RN26C 2C 33KΩ F T	KOA	10357-33381
R157	RN26C 2C 4700Ω F T	KOA	10357-47281
R158	RN26C 2C 150KΩ F T	KOA	10357-15481
R159	RN26C 2C 10KΩ F T	KOA	10357-10381
R160	RN26C 2C 100KΩ F T	KOA	10357-10481
R161	RN26C 2C 100Ω F T	KOA	10357-10181
R162	RN26C 2C 4700Ω F T	KOA	10357-47281
R163	RN26C 2C 47KΩ F T	KOA	10357-47381
R164	RN26C 2C 33KΩ F T	KOA	10357-33381
R165	RN26C 2C 10KΩ F T	KOA	10357-10381
R166	RN26C 2C 150KΩ F T	KOA	10357-15481
R167	RN26C 2C 100KΩ F T	KOA	10357-10481

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• 20/30SERIES •
• DECODER(N) BOARD •
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<RESISTORS>

No.	DESCRIPTION	MFD. PARTS – CODE
R168	RN26C 2C 100ΩF T	KOA 10357-10181
R169	RN26C 2C 4700ΩF T	KOA 10357-47281
R170	RN26C 2C 47KΩF T	KOA 10357-47381
R171	RN26C 2C 33KΩF T	KOA 10357-33381
R172	RN26C 2C 150KΩF T	KOA 10357-15481
R173	RN26C 2C 10KΩF T	KOA 10357-10381
R174	RN26C 2C 100KΩF T	KOA 10357-10481
R175	RN26C 2C 1000ΩF T	KOA 10357-10281
R176	RN26C 2C 22KΩF T	KOA 10357-22381
R177	RN26C 2C 1000ΩF T	KOA 10357-10281
R178	RN26C 2C 100KΩF T	KOA 10357-10481

<CAPACITORS>

No.	DESCRIPTION	MFD. PARTS – CODE
C1	ECEA 1EU 330 B	MAT 20123-33625
C2	ECQ-V1H 104 JZ2	MAT 22137-10450
C3	ECQ-B1H 333 JZ4	MAT 22136-33350
C4	※	
C5	ECEA 1EU 470 B	MAT 20123-47625
C6	ECEA 1EU 330 B	MAT 20123-33625
C7	ECEA 1EU 470 B	MAT 20123-47625
C8	※DM05C 330 J3	SOS 23097-33050
C9	※	
C10	ECEA 1EU 330 B	MAT 20123-33625
C11	ECQ-V1H 104 JZ2	MAT 22137-10450
C12	ECQ-V1H 104 JZ2	MAT 22137-10450
C13	ECQ-V1H 104 JZ2	MAT 22137-10450
C14	ECEA 1EU 470 B	MAT 20123-47625
C15	ECQ-V1H 104 JZ2	MAT 22137-10450
C16	ECEA 1EU 470 B	MAT 20123-47625
C17	ECEA 1JU 100 B	MAT 20123-10663
C18	ECQ-V1H 104 JZ2	MAT 22137-10450
C19	ECQ-B1H 103 JZ4	MAT 22136-10350
C20	ECEA 1EU 470 B	MAT 20123-47625
C21	RT-HE40TKSL 220K	KCK 24518-22050
C22	ECEA 1EU 470 B	MAT 20123-47625
C23	NP 2D 121 JT	TYO 22393-12177
C24	ECQ-V1H 473 JZ2	MAT 22137-47350
C26	ECQ-V1H 104 JZ2	MAT 22137-10450
C27	ECQ-V1H 104 JZ2	MAT 22137-10450
C28	ECEA 1JU 100 B	MAT 20123-10663
C29	ECQ-B1H 102 JZ4	MAT 22136-10250
C30	ECQ-V1H 104 JZ2	MAT 22137-10450
C31	ECEA 1EU 470 B	MAT 20123-47625
C32	ECQ-V1H 104 JZ2	MAT 22137-10450
C33	ECEA 1EU 470 B	MAT 20123-47625
C34	ECQ-B1H 103 JZ4	MAT 22136-10350
C35	ECEA 1EU 330 B	MAT 20123-33625
C36	DM12C 561 J3	SOS 23093-56180
C37	DM05C 101 J3	SOS 23097-10150
C38	DM19C 222 J3	SOS 23095-22280
C39	NP 2D 121 JT	TYO 22393-12177
C40	ECEA 1JU 100 B	MAT 20123-10663
C41	ECQ-B1H 103 JZ4	MAT 22136-10350
C42	DM05C 360 J3	SOS 23097-36050
C43	DM05C 470 J3	SOS 23097-47050
C44	DM05C 360 J3	SOS 23097-36050
C45	ECQ-B1H 103 JZ4	MAT 22136-10350
C46	ECEA 1EU 330 B	MAT 20123-33625
C47	RT-HE40TKSL 220K	KCK 24518-22050
C48	NP 2D 121 JT	TYO 22393-12177
C50	ECEA 1EU 470 B	MAT 20123-47625
C52	ECEA 1EU 470 B	MAT 20123-47625
C53	ECQ-V1H 104 JZ2	MAT 22137-10450
C54	ECQ-V1H 104 JZ2	MAT 22137-10450
C55	ECEA 1JU 100 B	MAT 20123-10663
C56	ECQ-B1H 102 JZ4	MAT 22136-10250
C57	ECQ-V1H 104 JZ2	MAT 22137-10450
C58	ECEA 1HN 010 SB	MAT 20129-10550
C59	ECEA 1EU 470 B	MAT 20123-47625
C60	ECQ-V1H 104 JZ2	MAT 22137-10450
C61	ECEA 1EU 470 B	MAT 20123-47625
C62	ECQ-V1H 104 JZ2	MAT 22137-10450
C63	ECEA 1EU 470 B	MAT 20123-47625
C64	ECEA 1EU 470 B	MAT 20123-47625
C65	DHR 1V 225 M1S	NEC 21093-22535
C66	ECEA 1JU 100 B	MAT 20123-10663

<COILS>

No.	DESCRIPTION	MFD. PARTS – CODE
L1	ST-202246A	IKE 40981-22460
L2	ST-202246A	IKE 40981-22460
L3	LF7.5-101K	KOA 40337-10100
L4	LF7.5-271K	KOA 40337-27100
L5	ST-300674	IKE 40992-06740
L6	ST-901284	IKE 40995-12840
L7	LF7.5-220K	KOA 40337-22000
L8	LF7.5-101K	KOA 40337-10100
L9	LF7.5-271K	KOA 40337-27100

<X'TAL>

No.	DESCRIPTION	MFD. PARTS – CODE
X1	3.579545MHz(HC-49U-A)	KIN 45994-15610

<CONNECTOR>

No.	DESCRIPTION	MFD. PARTS – CODE
J7	PCN10A-50P-2.54DS	HIR 30333-09500

<DELAY LINES>

No.	DESCRIPTION	MFD. PARTS – CODE
DL1	ZT50-140S	SWC 44753-00200
DL2	ZDL-858	SWC 44754-00500

<TEST POINTS>

No.	DESCRIPTION	MFD. PARTS – CODE
TP1	TBPS	IKE
TP2	TBPS	IKE
TP3	TBPS	IKE
TP4	TBPS	IKE
TP5	TBPS	IKE
TP6	TBPS	IKE
TP7	TBPS	IKE
TP8	TBPS	IKE
TP9	TBPS	IKE
TP10	TBPS	IKE
TP11	TBPS	IKE
TP12	TBPS	IKE

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<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD.	PARTS – CODE
IC101	LA7016	SYO	01333-00600
IC102	LA7016	SYO	01333-00600
IC103	LA7016	SYO	01333-00600
IC201	LA7016	SYO	01333-00600
IC202	MN3815	MAT	01366-03815
IC203	NJM78L05A	JRC	01392-00301
IC204	MN3109	MAT	01366-03100
IC205	NJM78L09A	JRC	01392-00304
IC206	TC4053BP	TOS	01572-20950
IC207	AN6573	MAT	01004-06550
IC208	μPC1365C	NEC	01783-02020
IC301	μPD4528BC	NEC	01784-27600

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr101	2SC1815Y-TPE2	TOS	02824-05702
Tr102	2SC1815Y-TPE2	TOS	02824-05702
Tr103	2SC1815Y-TPE2	TOS	02824-05702
Tr104	2SC1815Y-TPE2	TOS	02824-05702
Tr105	2SC1815Y-TPE2	TOS	02824-05702
Tr106	2SC1815Y-TPE2	TOS	02824-05702
Tr107	2SC1815Y-TPE2	TOS	02824-05702
Tr108	2SC1815Y-TPE2	TOS	02824-05702
Tr109	2SA1015Y-TPE2	TOS	02822-05402
Tr110	2SK192A-GR	TOS	02828-01181
Tr111	2SA1015Y-TPE2	TOS	02822-05402
Tr112	2SA1015Y-TPE2	TOS	02822-05402
Tr113	2SC1815Y-TPE2	TOS	02824-05702
Tr114	2SC1815Y-TPE2	TOS	02824-05702
Tr115	2SC1815Y-TPE2	TOS	02824-05702
Tr116	2SC2901	NEC	02824-08500
Tr117	2SA1015Y-TPE2	TOS	02822-05402
Tr202	2SA1015Y-TPE2	TOS	02822-05402
Tr203	2SA1015Y-TPE2	TOS	02822-05402
Tr204	2SA1015Y-TPE2	TOS	02822-05402
Tr205	2N3904	NEC	02821-00600
Tr206	2SC1815Y-TPE2	TOS	02824-05702
Tr207	2SC1815Y-TPE2	TOS	02824-05702
Tr208	2SC1815Y-TPE2	TOS	02824-05702
Tr209	2SC1815Y-TPE2	TOS	02824-05702
Tr210	2SA1015Y-TPE2	TOS	02822-05402
Tr211	2SC1815Y-TPE2	TOS	02824-05702
Tr212	2SC1815Y-TPE2	TOS	02824-05702
Tr213	2SC1815Y-TPE2	TOS	02824-05702
Tr214	2SC1815Y-TPE2	TOS	02824-05702
Tr301	2SC1815Y-TPE2	TOS	02824-05702
Tr302	2SA1015Y-TPE2	TOS	02822-05402
Tr303	2SC1815Y-TPE2	TOS	02824-05702
Tr304	2SC1815Y-TPE2	TOS	02824-05702
Tr305	2SA1015Y-TPE2	TOS	02822-05402
Tr306	2SC1815Y-TPE2	TOS	02824-05702
Tr307	2SC1815Y-TPE2	TOS	02824-05702
Tr308	2SC1815Y-TPE2	TOS	02824-05702
Tr309	2SC1815Y-TPE2	TOS	02824-05702
Tr310	2N3904	NEC	02821-00600
Tr311	2SA1015Y-TPE2	TOS	02822-05402
Tr312	2SC1815Y-TPE2	TOS	02824-05702
Tr313	2SA1015Y-TPE2	TOS	02822-05402
Tr314	2SC1815Y-TPE2	TOS	02824-05702
Tr315	2SC1815Y-TPE2	TOS	02824-05702
Tr316	2SC1815Y-TPE2	TOS	02824-05702
Tr317	2SC1815Y-TPE2	TOS	02824-05702
Tr318	2N3904	NEC	02821-00600
Tr319	2SA1015Y-TPE2	TOS	02822-05402
Tr320	2SC1815Y-TPE2	TOS	02824-05702
Tr321	2SA1015Y-TPE2	TOS	02822-05402
Tr322	2SC1815Y-TPE2	TOS	02824-05702
Tr323	2SA1015Y-TPE2	TOS	02822-05402

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D301	1S1588-TPB2	TOS	03812-01201
D302	1S1588-TPB2	TOS	03812-01201
D303	1S1588-TPB2	TOS	03812-01201
D304	RD5.6EB1	NEC	03513-01404

<VARIABLE RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VR101	GF06UT2 1KΩ	COS	15194-10200
VR102	GF06UT2 100Ω	COS	15194-10100
VR103	GF06UT2 1KΩ	COS	15194-10200
VR104	GF06UT2 200KΩ	COS	15194-20400
VR201	GF06UT2 2KΩ	COS	15194-20200
VR202	GF06UT2 1KΩ	COS	15194-10200
VR203	GF06X 10KΩ	COS	15187-10300
VR204	GF06UT2 500Ω	COS	15194-50100
VR205	GF06UT2 500Ω	COS	15194-50100
VR206	GF06UT2 10KΩ	COS	15194-10300
VR207	GF06UT2 1KΩ	COS	15194-10200
VR208	GF06UT2 500Ω	COS	15194-50100
VR301	GF06UT2 1KΩ	COS	15194-10200
VR302	GF06UT2 1KΩ	COS	15194-10200
VR303	GF06UT2 50KΩ	COS	15194-50300
VR304	GF06UT2 100KΩ	COS	15194-10400

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R101	RN26C 2C 1000Ω F T	KOA	10357-10281
R102	RN26C 2C 1000Ω F T	KOA	10357-10281
R103	RN26C 2C 22KΩ F T	KOA	10357-22381
R104	RN26C 2C 68KΩ F T	KOA	10357-68381
R105	RN26C 2C 3300Ω F T	KOA	10357-33281
R106	RN26C 2C 4700Ω F T	KOA	10357-47281
R107	RN26C 2C 220Ω F T	KOA	10357-22181
R108	RN26C 2C 1500Ω F T	KOA	10357-15281
R109	RN26C 2C 3300Ω F T	KOA	10357-33281
R110	RN26C 2C 220Ω F T	KOA	10357-22181
R111	RN26C 2C 220Ω F T	KOA	10357-22181
R113	RN26C 2C 2200Ω F T	KOA	10357-22281
R114	RN26C 2C 3300Ω F T	KOA	10357-33281
R115	RN26C 2C 470Ω F T	KOA	10357-47181
R116	RN26C 2C 10KΩ F T	KOA	10357-10381
R117	✱LF1/8 390Ω F-TP	TAM	10220-39101
R118	RN26C 2C 2200Ω F T	KOA	10357-22281
R119	RN26C 2C 3300Ω F T	KOA	10357-33281
R120	RN26C 2C 4700Ω F T	KOA	10357-47281
R121	RN26C 2C 1000Ω F T	KOA	10357-10281
R124	RN26C 2C 4700Ω F T	KOA	10357-47281
R125	RN26C 2C 100Ω F T	KOA	10357-10181
R126	RN26C 2C 100Ω F T	KOA	10357-10181
R127	RN26C 2C 4700Ω F T	KOA	10357-47281
R128	RN26C 2C 10KΩ F T	KOA	10357-10381
R129	RN26C 2C 6800Ω F T	KOA	10357-68281
R130	RN26C 2C 33KΩ F T	KOA	10357-33381
R131	RN26C 2C 220Ω F T	KOA	10357-22181
R132	RN26C 2C 10KΩ F T	KOA	10357-10381
R134	RN26C 2C 220Ω F T	KOA	10357-22181
R135	RN26C 2C 47Ω F T	KOA	10357-47081
R136	RN26C 2C 100Ω F T	KOA	10357-10181
R137	RN26C 2C 4700Ω F T	KOA	10357-47281
R138	RN26C 2C 10KΩ F T	KOA	10357-10381
R139	RN26C 2C 2200Ω F T	KOA	10357-22281
R140	RN26C 2C 3300Ω F T	KOA	10357-33281
R141	RN26C 2C 100Ω F T	KOA	10357-10181
R142	RN26C 2C 330Ω F T	KOA	10357-33181
R143✱	LF1/8 150Ω F-TP	TAM	10220-15101
R144	RN26C 2C 1000Ω F T	KOA	10357-10281
R145	RN26C 2C 3300Ω F T	KOA	10357-33281
R146	RN26C 2C 2200Ω F T	KOA	10357-22281
R148	RN26C 2C 68KΩ F T	KOA	10357-68381
R150	RN26C 2C 10KΩ F T	KOA	10357-10381
R151	RN26C 2C 27KΩ F T	KOA	10357-27381
R152✱	RN26C 2C 470Ω F T	KOA	10357-47181
R154	RN26C 2C 100Ω F T	KOA	10357-10181
R201	RN26C 2C 1000Ω F T	KOA	10357-10281
R202	RN26C 2C 1000Ω F T	KOA	10357-10281
R203	RN26C 2C 2200Ω F T	KOA	10357-22281
R204	RN26C 2C 3300Ω F T	KOA	10357-33281
R205	RN26C 2C 100Ω F T	KOA	10357-10181
R206	RN26C 2C 100Ω F T	KOA	10357-10181
R208	ERD 25VJ 105	MAT	12103-10513
R209	ERD 25VJ 105	MAT	12103-10513
R210	RN26C 2C 4700Ω F T	KOA	10357-47281
R211	RN26C 2C 1000Ω F T	KOA	10357-10281
R212	RN26C 2C 100Ω F T	KOA	10357-10181
R213	RN26C 2C 2200Ω F T	KOA	10357-22281
R214	RN26C 2C 680Ω F T	KOA	10357-68181
R215	RN26C 2C 1800Ω F T	KOA	10357-18281
R216	LF1/8 750Ω F-TP	TAM	10220-75101
R217	RN26C 2C 10KΩ F T	KOA	10357-10381
R218	RN26C 2C 10KΩ F T	KOA	10357-10381
R219✱			
R220✱			
R221	LF1/8 750Ω F-TP	TAM	10220-75101
R222	RN26C 2C 100Ω F T	KOA	10357-10181
R223	RN26C 2C 470Ω F T	KOA	10357-47181
R224	RN26C 2C 470Ω F T	KOA	10357-47181
R225	RN26C 2C 1500Ω F T	KOA	10357-15281
R226	RN26C 2C 2200Ω F T	KOA	10357-22281
R227	RN26C 2C 2200Ω F T	KOA	10357-22281
R229	RN26C 2C 3300Ω F T	KOA	10357-33281
R230	RN26C 2C 1500Ω F T	KOA	10357-15281
R231	RN26C 2C 1000Ω F T	KOA	10357-10281
R232	RN26C 2C 100Ω F T	KOA	10357-10181
R233	RN26C 2C 10KΩ F T	KOA	10357-10381
R234	RN26C 2C 3300Ω F T	KOA	10357-33281
R235	RN26C 2C 3300Ω F T	KOA	10357-33281
R236	RN26C 2C 10KΩ F T	KOA	10357-10381
R237	RN26C 2C 4700Ω F T	KOA	10357-47281
R238	RN26C 2C 3300Ω F T	KOA	10357-33281
R239	LF1/8 390Ω F-TP	TAM	10220-39101
R240	ERD S1VJ 4R7 T	MAT	12106-04733
R241	ERD S1VJ 100 T	MAT	12106-10033
R242	RN26C 2C 330Ω F T	KOA	10357-33181
R243	RN26C 2C 15KΩ F T	KOA	10357-15381
R244	RN26C 2C 22KΩ F T	KOA	10357-22381
R245	ERD 25VJ 155	MAT	12103-15513
R246	RN26C 2C 100KΩ F T	KOA	10357-10481
R247	RN26C 2C 10KΩ F T	KOA	10357-10381
R248	RP 1/4 5600Ω	JFC	10260-56213
R249	RN26C 2C 39KΩ F T	KOA	10357-39381
R250	RN26C 2C 33KΩ F T	KOA	10357-33381
R251	LF1/8 82KΩ F-TP	TAM	10220-82301
R252	RN26C 2C 22KΩ F T	KOA	10357-22381
R253	RN26C 2C 22KΩ F T	KOA	10357-22381
R254	RN26C 2C 1000Ω F T	KOA	10357-10281
R255	RN26C 2C 4700Ω F T	KOA	10357-47281
R256	RN26C 2C 15KΩ F T	KOA	10357-15381
R258	RN26C 2C 100KΩ F T	KOA	10357-10481
R259	RN26C 2C 10KΩ F T	KOA	10357-10381
R260	RN26C 2C 22KΩ F T	KOA	10357-22381
R261	RN26C 2C 15KΩ F T	KOA	10357-15381
R262	RN26C 2C 1000Ω F T	KOA	10357-10281
R263	RN26C 2C 1500Ω F T	KOA	10357-15281
R264	RN26C 2C 1000Ω F T	KOA	10357-10281
R265	RN26C 2C 3300Ω F T	KOA	10357-33281
R266	RN26C 2C 150KΩ F T	KOA	10357-15481
R267	RN26C 2C 47KΩ F T	KOA	10357-47381
R268	RN26C 2C 22KΩ F T	KOA	10357-22381
R269	RN26C 2C 2000Ω F T	KOA	10357-20281
R270	RN26C 2C 6800Ω F T	KOA	10357-68281
R271	LF1/8 2700Ω F-TP	TAM	10220-27201
R272	RN26C 2C 4700Ω F T	KOA	10357-47281
R273	RN26C 2C 10KΩ F T	KOA	10357-10381
R274	RN26C 2C 2200Ω F T	KOA	10357-22281
R275	RN26C 2C 2200Ω F T	KOA	10357-22281
R276	RN26C 2C 4700Ω F T	KOA	10357-47281
R277	RN26C 2C 5600Ω F T	KOA	10357-56281
R278	RN26C 2C 1000Ω F T	KOA	10357-10281
R279	RN26C 2C 820Ω F T	KOA	10357-82181

20/30SERIES
DECODER(P) BOARD

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R301	RN26C 2C 100ΩF T	KOA	10357-10181
R302	RN26C 2C 1000ΩF T	KOA	10357-10281
R303	RN26C 2C 4700ΩF T	KOA	10357-47281
R304	RN26C 2C 1000ΩF T	KOA	10357-10281
R305	RN26C 2C 100ΩF T	KOA	10357-10181
R306	RN26C 2C 4700ΩF T	KOA	10357-47281
R307	RN26C 2C 47KΩF T	KOA	10357-47381
R308	RN26C 2C 33KΩF T	KOA	10357-33381
R309	RN26C 2C 100KΩF T	KOA	10357-10481
R310	RN26C 2C 10KΩF T	KOA	10357-10381
R311	RN26C 2C 150KΩF T	KOA	10357-15481
R312	ERD S1VJ 100 T	MAT	12106-10033
R313	RN26C 2C 100ΩF T	KOA	10357-10181
R314	RN26C 2C 10KΩF T	KOA	10357-10381
R315	RN26C 2C 2200ΩF T	KOA	10357-22281
R316	RN26C 2C 3300ΩF T	KOA	10357-33281
R317	RN26C 2C 470ΩF T	KOA	10357-47181
R318	RN26C 2C 2200ΩF T	KOA	10357-22281
R319	RN26C 2C 3300ΩF T	KOA	10357-33281
R320	RN26C 2C 2200ΩF T	KOA	10357-22281
R321	RN26C 2C 4700ΩF T	KOA	10357-47281
R322	RN26C 2C 68KΩF T	KOA	10357-68381
R323	RN26C 2C 100ΩF T	KOA	10357-10181
R324	RN26C 2C 10KΩF T	KOA	10357-10381
R325	RN26C 2C 100ΩF T	KOA	10357-10181
R326	RN26C 2C 4700ΩF T	KOA	10357-47281
R327	RN26C 2C 47KΩF T	KOA	10357-47381
R328	RN26C 2C 33KΩF T	KOA	10357-33381
R329	RN26C 2C 100KΩF T	KOA	10357-10481
R330	RN26C 2C 10KΩF T	KOA	10357-10381
R331	RN26C 2C 150KΩF T	KOA	10357-15481
R332	RN26C 2C 100ΩF T	KOA	10357-10181
R333	RN26C 2C 10KΩF T	KOA	10357-10381
R334	RN26C 2C 2200ΩF T	KOA	10357-22281
R335	RN26C 2C 3300ΩF T	KOA	10357-33281
R336	RN26C 2C 470ΩF T	KOA	10357-47181
R337	RN26C 2C 2200ΩF T	KOA	10357-22281
R338	RN26C 2C 3300ΩF T	KOA	10357-33281
R339	RN26C 2C 2200ΩF T	KOA	10357-22281
R340	RN26C 2C 4700ΩF T	KOA	10357-47281
R341	RN26C 2C 68KΩF T	KOA	10357-68381
R342	RN26C 2C 100ΩF T	KOA	10357-10181
R343	RN26C 2C 10KΩF T	KOA	10357-10381
R344	RN26C 2C 100ΩF T	KOA	10357-10181
R345	RN26C 2C 4700ΩF T	KOA	10357-47281
R346	RN26C 2C 47KΩF T	KOA	10357-47381
R347	RN26C 2C 33KΩF T	KOA	10357-33381
R348	RN26C 2C 100KΩF T	KOA	10357-10481
R349	RN26C 2C 10KΩF T	KOA	10357-10381
R350	RN26C 2C 150KΩF T	KOA	10357-15481
R351	ERD S1VJ 100 T	MAT	12106-10033
R352	RN26C 2C 2200ΩF T	KOA	10357-22281
R353	RN26C 2C 10KΩF T	KOA	10357-10381
R354	RN26C 2C 10KΩF T	KOA	10357-10381
R355	RN26C 2C 4700ΩF T	KOA	10357-47281
R356	RN26C 2C 15KΩF T	KOA	10357-15381
R357	RN26C 2C 4700ΩF T	KOA	10357-47281

<VARIABLE CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VC101	ECV-1ZW 20X53T	MAT	25010-00300
VC201	ECV-1ZW 20X53T	MAT	25010-00300
VC202	ECV-1ZW 04X53T	MAT	25010-00050

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C101	ECEA 1EU 330 B	MAT	20123-33625
C102	DM05C 330 J3	SOS	23097-33050
C103	DM05C 101 J3	SOS	23097-10150
C104	NP 2D 102 JT	TYO	22393-10277
C105	ECEA 1EU 101 B	MAT	20123-10725
C106	✱DM 05C 220 J3	SOS	23097-22050
C107	ECEA 1EU 330 B	MAT	20123-33625
C108	ECEA 1EU 330 B	MAT	20123-33625
C109	ECQ-V1H 104 JZ2	MAT	22137-10450
C110	ECQ-B1H 333 JZ4	MAT	22136-33350
C112	ECEA 1EU 330 B	MAT	20123-33625
C113	ECEA 1EU 101 B	MAT	20123-10725
C114	ECEA 1EU 330 B	MAT	20123-33625
C115	✱DM05C 330 J3	SOS	23097-33050
C116	ECQ-V1H 104 JZ2	MAT	22137-10450
C117	ECQ-V1H 104 JZ2	MAT	22137-10450
C118	ECQ-V1H 104 JZ2	MAT	22137-10450
C119	ECEA 1EU 470 B	MAT	20123-47625
C120	ECQ-V1H 104 JZ2	MAT	22137-10450
C121	ECEA 1EU 470 B	MAT	20123-47625
C122	ECEA 1EU 101 B	MAT	20123-10725
C123	ECEA 1EU 101 B	MAT	20123-10725
C125	ECEA 1EU 330 B	MAT	20123-33625
C126	ECQ-B1H 332 JZ4	MAT	22136-33250
C201	DM05C 750 J3	SOS	23097-75050
C202	DM05C 100 D3	SOS	23097-10050
C203	ECQ-B1H 103 JZ4	MAT	22136-10350
C204	ECQ-B1H 103 JZ4	MAT	22136-10350
C205	ECQ-V1H 104 JZ2	MAT	22137-10450
C206	ECQ-V1H 104 JZ2	MAT	22137-10450
C207	ECQ-V1H 104 JZ2	MAT	22137-10450
C208	ECQ-V1H 104 JZ2	MAT	22137-10450
C209	ECQ-B1H 103 JZ4	MAT	22136-10350
C210	ECQ-B1H 472 JZ4	MAT	22136-47250
C211	ECQ-V1H 473 JZ2	MAT	22137-47350
C212	ECEA 1JU 100 B	MAT	20123-10663
C213	ECQ-V1H 104 JZ2	MAT	22137-10450
C214	ECEA 1JU 100 B	MAT	20123-10663
C215	ECEA 1JU 100 B	MAT	20123-10663
C216	DM05C 330 J3	SOS	23097-33050
C217✱			
C218	DM05C 330 J3	SOS	23097-33050
C219	ECEA 1EU 330 B	MAT	20123-33625
C220 ✱			
C221	ECEA 1JU 100 B	MAT	20123-10663
C222	ECEA 2AU 0R47 B	MAT	20123-47472
C223	ECEA 2AGE 010	MAT	
C224	ECEA 1EU 101 B	MAT	20123-10725
C225	ECQ-V1H 104 JZ2	MAT	22137-10450
C226	ECQ-B1H 103 JZ4	MAT	22136-10350
C227	ECQ-B1H 103 JZ4	MAT	22136-10350
C228	ECEA 1EU 330 B	MAT	20123-33625
C229	ECQ-B1H 103 JZ4	MAT	22136-10350
C230	ECEA 1JU 100 B	MAT	20123-10663
C231	ECEA 1JU 100 B	MAT	20123-10663
C232	ECEA 1JU 100 B	MAT	20123-10663
C233	ECQ-B1H 103 JZ4	MAT	22136-10350
C234	ECQ-B1H 103 JZ4	MAT	22136-10350
C235	ECEA 1EU 101 B	MAT	20123-10725
C236	DM05C 390 J3	SOS	23097-39050
C237	DM05C 470 J3	SOS	23097-47050
C238	DM05C 180 J3	SOS	23097-18050
C239	ECQ-B1H 103 JZ4	MAT	22136-10350
C240✱			
C241	DM05C 150 J3	SOS	23097-15050
C242	ECQ-B1H 103 JZ4	MAT	22136-10350
C243	DM05C 560 J3	SOS	23097-56050
C244	ECEA 1EU 101 B	MAT	20123-10725
C245	ECEA 1EU 101 B	MAT	20123-10725
C246	ECEA 1EU 101 B	MAT	20123-10725
C247	ECQ-B1H 103 JZ4	MAT	22136-10350
C248	ECQ-B1H 103 JZ4	MAT	22136-10350
C249	ECQ-B1H 103 JZ4	MAT	22136-10350
C250	HE40SJWK 100D	KCK	24213-10050
C251✱			
C301	ECEA 1JU 100 B	MAT	20123-10663
C302	ECEA 1EU 470 B	MAT	20123-47625
C303	ECEA 1JU 100 B	MAT	20123-10663
C304	RT-HE40TKSL 150K	KCK	24518-15050
C305	DM10C 131 J3	SOS	23092-13180
C306	ECQ-V1H 104 JZ2	MAT	22137-10450
C307	ECQ-V1H 104 JZ2	MAT	22137-10450
C308	ECEA 1JU 100 B	MAT	20123-10663
C309	RT-HE40 TKSL 150K	KCK	24518-15050
C310	DM10C 131 J3	SOS	23092-13180
C311	ECEA 1EU 470 B	MAT	20123-47625
C312	ECQ-V1H 104 JZ2	MAT	22137-10450
C313	ECQ-V1H 104 JZ2	MAT	22137-10450
C314	ECEA 1EU 470 B	MAT	20123-47625
C315	DM10C 221 J3	SOS	23092-22180
C316	ECQ-B1H 222 JZ4	MAT	22136-22250

<COILS>

No.	DESCRIPTION	MFD.	PARTS – CODE
L101	ST-9655A	IKE	40995-96551
L102	ST-901045	IKE	40995-10450
L103	ST-901046	IKE	40995-10460
L201	ST-9460	IKE	40995-94600
L202	ST-9459	IKE	40995-94590
L203	LF7.5-330K	KOA	40337-33000
L204	LF7.5-220K	KOA	40337-22000
L205✱			
L206	LF7.5-390K	KOA	40337-39000
L207	LF7.5-8R2K	KOA	40337-08200
L208	LF7.5-330K	KOA	40337-33000
L301	ST-202246A	IKE	40981-22460
L302	ST-202246A	IKE	40981-22460
L303	LF7.5-101K	KOA	40337-10100
L304	LF7.5-271K	KOA	40337-27100
L305	LF7.5-101K	KOA	40337-10100
L306	LF7.5-271K	KOA	40337-27100

<DELAY LINES>

No.	DESCRIPTION	MFD.	PARTS – CODE
DL101	ZDL850	SWC	44754-00400
DL102	ZDL858	SWC	44754-00500
DL201	CN50	SWC	44062-00050

<SWITCH>

No.	DESCRIPTION	MFD.	PARTS – CODE
S301	SS-12SBP2	NKA	36002-02300

<CONNECTOR>

No.	DESCRIPTION	MFD.	PARTS – CODE
J	PCN10A-50P-2.54DS	HIR	30333-09500

<X'TAL>

No.	DESCRIPTION	MFD.	PARTS – CODE
X201	HC43/U(4.43361875MHz)	KIN	45013-00500

<TEST POINTS>

No.	DESCRIPTION	MFD.	PARTS – CODE
TP101	TBPS	IKE	
TP102	TBPS	IKE	
TP201	TBPS	IKE	
TP202	TBPS	IKE	
TP203	TBPS	IKE	
TP204	TBPS	IKE	
TP205	TBPS	IKE	
TP206	TBPS	IKE	
TP207	TBPS	IKE	
TP301	TBPS	IKE	
TP302	TBPS	IKE	
TP303	TBPS	IKE	
TP304	TBPS	IKE	
TP305	TBPS	IKE	
TP306	TBPS	IKE	
TP307	TBPS	IKE	

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<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD.	PARTS – CODE
IC101	MC1495FR	MOT	04363-00900
IC102	μ PD4053BG	NEC	04784-03000
IC201	MC1495FR	MOT	04363-00900
IC203	TL082CPS	TEX	04574-00500
IC204	TL082CPS	TEX	04574-00500
IC301	MC1495FR	MOT	04363-00900
IC401	μ PD4066BG	NEC	04784-03200
IC402	MC74HC 4053F	MOT	04363-11200
IC403	LM1201N	NSC	01332-01390
IC503	LM1201N	NSC	01332-01390
IC601	μ PD4066BG	NEC	04784-03200
IC603	LM1201N	NSC	01332-01390
IC701	MC1495FR	MOT	04363-00900
IC702	TL082CPS	TEX	04574-00500

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr101	2SC1623-L6,7	NEC	05824-00100
Tr102	2SC1623-L6,7	NEC	05824-00100
Tr103	2SA1461-Y24	NEC	05822-11100
Tr104	XN6501-TW	MAT	05691-06500
Tr106	2SC1623-L6,7	NEC	05824-00100
Tr108	2SC3735-B35	NEC	05824-02840
Tr109	2SA1461-Y24	NEC	05822-11100
Tr110	2SC1623-L6,7	NEC	05824-00100
Tr111	2SA1461-Y24	NEC	05822-11100
Tr112	2SC1623-L6,7	NEC	05824-00100
Tr201	2SC1623-L6,7	NEC	05824-00100
Tr202	2SC1623-L6,7	NEC	05824-00100
Tr203	2SA1461-Y24	NEC	05822-11100
Tr204	XN6501-TW	MAT	05691-06500
Tr206	2SC1623-L6,7	NEC	05824-00100
Tr208	2SC3735-B35	NEC	05824-02840
Tr209	2SA1461-Y24	NEC	05822-11100
Tr210	2SC1623-L6,7	NEC	05824-00100
Tr211	2SA1461-Y24	NEC	05822-11100
Tr212	2SC1623-L6,7	NEC	05824-00100
Tr213	2SC1623-L6,7	NEC	05824-00100
Tr301	2SC1623-L6,7	NEC	05824-00100
Tr302	2SC1623-L6,7	NEC	05824-00100
Tr303	2SA1461-Y24	NEC	05822-11100
Tr304	XN6501-TW	MAT	05691-06500
Tr306	2SC1623-L6,7	NEC	05824-00100
Tr308	2SC3735-B35	NEC	05824-02840
Tr309	2SA1461-Y24	NEC	05822-11100
Tr310	2SC1623-L6,7	NEC	05824-00100
Tr311	2SA1461-Y24	NEC	05822-11100
Tr312	2SC1623-L6,7	NEC	05824-00100
Tr401	2SC1623-L6,7	NEC	05824-00100
Tr402	2SC1623-L6,7	NEC	05824-00100
Tr405	2SC1623-L6,7	NEC	05824-00100
Tr406	2SC1623-L6,7	NEC	05824-00100
Tr407	2SC3734-B24	NEC	05824-02830
Tr408	2SC1623-L6,7	NEC	05824-00100
Tr409	2SC1623-L6,7	NEC	05824-00100
Tr410	2SC1623-L6,7	NEC	05824-00100
Tr411	2SC1623-L6,7	NEC	05824-00100
Tr412	2SC1623-L6,7	NEC	05824-00100
Tr505	2SC1623-L6,7	NEC	05824-00100
Tr506	2SC1623-L6,7	NEC	05824-00100
Tr507	2SC3734-B24	NEC	05824-02830
Tr508	2SC1623-L6,7	NEC	05824-00100
Tr509	2SC1623-L6,7	NEC	05824-00100
Tr510	2SC1623-L6,7	NEC	05824-00100
Tr511	2SC1623-L6,7	NEC	05824-00100
Tr513	2SA812-M6,7	NEC	05822-04000
Tr601	2SC1623-L6,7	NEC	05824-00100
Tr602	2SC1623-L6,7	NEC	05824-00100
Tr603	2SC1623-L6,7	NEC	05824-00100
Tr604	2SA812-M6,7	NEC	05822-04000
Tr605	2SC1623-L6,7	NEC	05824-00100
Tr606	2SC1623-L6,7	NEC	05824-00100
Tr607	2SC3734-B24	NEC	05824-02830
Tr608	2SC1623-L6,7	NEC	05824-00100
Tr609	2SC1623-L6,7	NEC	05824-00100
Tr610	2SC1623-L6,7	NEC	05824-00100
Tr611	2SC1623-L6,7	NEC	05824-00100
Tr614	2SC1623-L6,7	NEC	05824-00100
Tr615	2SA812-M6,7	NEC	05822-04000
Tr616	2SA812-M6,7	NEC	05822-04000

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D101	1S2836-A4	NEC	06812-03400
D103	1S2836-A4	NEC	06812-03400
D104	RD6.8MB	NEC	06513-01700
D201	1S2836-A4	NEC	06812-03400
D202	1S2836-A4	NEC	06812-03400
D203	1S2836-A4	NEC	06812-03400
D204	RD6.8MB	NEC	06513-01700
D301	1S2836-A4	NEC	06812-03400
D303	1S2836-A4	NEC	06812-03400
D304	RD6.8MB	NEC	06513-01700
D401	RD3R0MB	NEC	06513-00500
D501	RD3R0MB	NEC	06513-00500
D502	1S2836-A4	NEC	06812-03400

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D601	RD3R0MB	NEC	06513-00500

<VARIABLE RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VR101	ST-4B 5000Ω	CPL	16542-50200
VR102	ST-4B 100KΩ	CPL	16542-10400
VR103	ST-4B 5000Ω	CPL	16542-50200
VR105	ST-4B 100Ω	CPL	16542-10100
VR201	ST-4B 5000Ω	CPL	16542-50200
VR202	ST-4B 100KΩ	CPL	16542-10400
VR203	ST-4B 5000Ω	CPL	16542-50200
VR204	ST-4B 50KΩ	CPL	16542-50300
VR205	ST-4B 100Ω	CPL	16542-10100
VR301	ST-4B 5000Ω	CPL	16542-50200
VR302	ST-4B 100KΩ	CPL	16542-10400
VR303	ST-4B 5000Ω	CPL	16542-50200
VR305	ST-4B 100Ω	CPL	16542-10100
VR401	ST-4B 10KΩ	CPL	16542-10300
VR402	ST-4B 5000Ω	CPL	16542-50200
VR403	ST-4B 50KΩ	CPL	16542-50300
VR404	ST-4B 5000Ω	CPL	16542-50200
VR405	ST-4B 10KΩ	CPL	16542-10300
VR406	ST-4B 5000Ω	CPL	16542-50200
VR506	ST-4B 5000Ω	CPL	16542-50200
VR601	ST-4B 50KΩ	CPL	16542-50300
VR602	ST-4B 2000Ω	CPL	16542-20200
VR603	ST-4B 5000Ω	CPL	16542-50200
VR604	ST-4B 100KΩ	CPL	16542-10400
VR606	ST-4B 5000Ω	CPL	16542-50200
VR701	ST-4B 10KΩ	CPL	16542-10300
VR702	ST-4B 5000Ω	CPL	16542-50200
VR703	ST-4B 100KΩ	CPL	16542-10400
VR704	ST-4B 100KΩ	CPL	16542-10400

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R101	RR1220P 392D	SSM	16511-39281
R102	RR1220P 102D	SSM	16511-10281
R103	RR1220P 102D	SSM	16511-10281
R104	RR1220P 432D	SSM	16511-43281
R105	RR1220P 101D	SSM	16511-10181
R106	RR1220P 682D	SSM	16511-68281
R107	RR1220P 222D	SSM	16511-22281
R108	RR1220P 222D	SSM	16511-22281
R109	RR1220P 222D	SSM	16511-22281
R110	RR1220P 102D	SSM	16511-10281
R111	RR1220P 472D	SSM	16511-47281
R112	RR1220P 152D	SSM	16511-15281
R113	RR1220P 681D	SSM	16511-68181
R114	RR1220P 102D	SSM	16511-10281
R115	RR1220P 104D	SSM	16511-10481
R116	RR1220P 472D	SSM	16511-47281
R117	RR1220P 472D	SSM	16511-47281
R118	RR1220P 682D	SSM	16511-68281
R119	RR1220P 472D	SSM	16511-47281
R120	RR1220P 681D	SSM	16511-68181
R121	RR1220P 681D	SSM	16511-68181
R122	RR1220P 102D	SSM	16511-10281
R123	RR1220P 102D	SSM	16511-10281
R124	RR1220P 332D	SSM	16511-33281
R125	RR1220P 151D	SSM	16511-15181
R126	RR1220P 102D	SSM	16511-10281
R127	RR1220P 332D	SSM	16511-33281
R128	RR1220P 682D	SSM	16511-68281
R129	RR1220P 102D	SSM	16511-10281
R130	RR1220P 332D	SSM	16511-33281
R135	RR1220P 683D	SSM	16511-68381
R138	RR1220P 103D	SSM	16511-10381
R139	RR1220P 472D	SSM	16511-47281
R144	RR1220P 101D	SSM	16511-10181
R145	RR1220P 103D	SSM	16511-10381
R146	RR1220P 472D	SSM	16511-47281
R147	ERDS1VJ 100 T	MAT	12106-10033
R148	ERDS1VJ 100 T	MAT	12106-10033
R151	RR1220P 472D	SSM	16511-47281
R159	RR1220P 103D	SSM	16511-10381
R161	RR1220P 432D	SSM	16511-43281
R201	RR1220P 392D	SSM	16511-39281
R202	RR1220P 102D	SSM	16511-10281
R203	RR1220P 102D	SSM	16511-10281
R204	RR1220P 432D	SSM	16511-43281
R205	RR1220P 101D	SSM	16511-10181
R206	RR1220P 682D	SSM	16511-68281
R207	RR1220P 222D	SSM	16511-22281
R208	RR1220P 222D	SSM	16511-22281
R209	RR1220P 222D	SSM	16511-22281
R210	RR1220P 102D	SSM	16511-10281
R211	RR1220P 562D	SSM	16511-56281
R212	RR1220P 152D	SSM	16511-15281
R213	RR1220P 681D	SSM	16511-68181
R214	RR1220P 102D	SSM	16511-10281
R215	RR1220P 104D	SSM	16511-10481
R216	RR1220P 472D	SSM	16511-47281
R217	RR1220P 472D	SSM	16511-47281
R218	RR1220P 682D	SSM	16511-68281
R219	RR1220P 472D	SSM	16511-47281
R220	RR1220P 681D	SSM	16511-68181
R221	RR1220P 681D	SSM	16511-68181
R222	RR1220P 102D	SSM	16511-10281
R223	RR1220P 102D	SSM	16511-10281
R224	RR1220P 332D	SSM	16511-33281
R225	RR1220P 151D	SSM	16511-15181
R226	RR1220P 102D	SSM	16511-10281
R227	RR1220P 332D	SSM	16511-33281

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* 20/30SERIES *
* VIDEO OUT BOARD *
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<RESISTORS>

No.	DESCRIPTION	MFD. PARTS – CODE
R228	RR1220P 682D	SSM 16511-68281
R229	RR1220P 102D	SSM 16511-10281
R230	RR1220P 332D	SSM 16511-33281
R231	RMC 1/10 330KΩF	KMY 16511-33481
R232	RMC 1/10 330KΩF	KMY 16511-33481
	(20SERIES)	
	RR1220P 223D	SSM 16511-22381
	(30SERIES)	
R233	RR1220P 513D	SSM 16511-51381
R235	RR1220P 683D	SSM 16511-68381
R238	RR1220P 103D	SSM 16511-10381
R239	RR1220P 472D	SSM 16511-47281
R240	RR1220P 752D	SSM 16511-75281
R241	RR1220P 911D	SSM 16511-91181
R242	RR1220P 332D	SSM 16511-33281
R243	RR1220P 472D	SSM 16511-47281
R244	RR1220P 101D	SSM 16511-10181
R245	RR1220P 103D	SSM 16511-10381
R246	RR1220P 472D	SSM 16511-47281
R247	ERDS1VJ 100 T	MAT 12106-10033
R248	ERDS1VJ 100 T	MAT 12106-10033
R249	RR1220P 104D	SSM 16511-10481
R250	RR1220P 103D	SSM 16511-10381
R252	RR1220P 103D	SSM 16511-10381
R253	RR1220P 103D	SSM 16511-10381
R254	RR1220P 222D	SSM 16511-22281
R255	RR1220P 102D	SSM 16511-10281
R256	RR1220P 472D	SSM 16511-47281
R257	RR1220P 472D	SSM 16511-47281
R258	RR1220P 472D	SSM 16511-47281
R259	RR1220P 472D	SSM 16511-47281
R260	RR1220P 152D	SSM 16511-15281
R261	RR1220P 432D	SSM 16511-43281
R301	RR1220P 392D	SSM 16511-39281
R302	RR1220P 102D	SSM 16511-10281
R303	RR1220P 102D	SSM 16511-10281
R304	RR1220P 432D	SSM 16511-43281
R305	RR1220P 101D	SSM 16511-10181
R306	RR1220P 682D	SSM 16511-68281
R307	RR1220P 222D	SSM 16511-22281
R308	RR1220P 222D	SSM 16511-22281
R309	RR1220P 222D	SSM 16511-22281
R310	RR1220P 102D	SSM 16511-10281
R311	RR1220P 472D	SSM 16511-47281
R312	RR1220P 152D	SSM 16511-15281
R313	RR1220P 681D	SSM 16511-68181
R314	RR1220P 102D	SSM 16511-10281
R315	RR1220P 104D	SSM 16511-10481
R316	RR1220P 472D	SSM 16511-47281
R317	RR1220P 472D	SSM 16511-47281
R318	RR1220P 682D	SSM 16511-68281
R319	RR1220P 472D	SSM 16511-47281
R320	RR1220P 681D	SSM 16511-68181
R321	RR1220P 681D	SSM 16511-68181
R322	RR1220P 102D	SSM 16511-10281
R323	RR1220P 102D	SSM 16511-10281
R324	RR1220P 332D	SSM 16511-33281
R325	RR1220P 151D	SSM 16511-15181
R326	RR1220P 102D	SSM 16511-10281
R327	RR1220P 332D	SSM 16511-33281
R328	RR1220P 682D	SSM 16511-68281
R329	RR1220P 102D	SSM 16511-10281
R330	RR1220P 332D	SSM 16511-33281
R335	RR1220P 683D	SSM 16511-68381
R338	RR1220P 103D	SSM 16511-10381
R339	RR1220P 472D	SSM 16511-47281
R344	RR1220P 101D	SSM 16511-10181
R345	RR1220P 103D	SSM 16511-10381
R346	RR1220P 472D	SSM 16511-47281
R347	ERDS1VJ 100 T	MAT 12106-10033
R348	ERDS1VJ 100 T	MAT 12106-10033
R351	RR1220P 472D	SSM 16511-47281
R359	RR1220P 103D	SSM 16511-10381
R361	RR1220P 432D	SSM 16511-43281
R401	ERDS1VJ 100 T	MAT 12106-10033
R402	ERDS1VJ 100 T	MAT 12106-10033
R403	RR1220P 101D	SSM 16511-10181
R404	RR1220P 222D	SSM 16511-22281
R405	RR1220P 222D	SSM 16511-22281
R406	RR1220P 101D	SSM 16511-10181
R407	RR1220P 222D	SSM 16511-22281
R408	RR1220P 272D	SSM 16511-27281
R409	RR1220P 752D	SSM 16511-75281
R410	RR1220P 622D	SSM 16511-62281
R417	RR1220P 392D	SSM 16511-39281
R418	RR1220P 392D	SSM 16511-39281
R419	RR1220P 101D	SSM 16511-10181
R420	RR1220P 472D	SSM 16511-47281
R421	RR1220P 683D	SSM 16511-68381
R422	RR1220P 152D	SSM 16511-15281
R423	※	
R425	RR1220P 104D	SSM 16511-10481
R426	RR1220P 682D	SSM 16511-68281
R427	RR1220P 332D	SSM 16511-33281
R428	RR1220P 332D	SSM 16511-33281
R429	RR1220P 332D	SSM 16511-33281
R430	RR1220P 332D	SSM 16511-33281
R431	RR1220P 101D	SSM 16511-10181
R432	RR1220P 682D	SSM 16511-68281
R433	RR1220P 912D	SSM 16511-91281
R434	RR1220P 103D	SSM 16511-10381
R435	RR1220P 103D	SSM 16511-10381
R436	※	
R437	RR1220P 101D	SSM 16511-10181
R438	RR1220Q 470F	SSM 16511-47081
R439	RR1220P 103D	SSM 16511-10381
R440	RR1220P 103D	SSM 16511-10381
R441	RR1220P 333D	SSM 16511-33381
R442	RR1220P 123D	SSM 16511-12381

<RESISTORS>

No.	DESCRIPTION	MFD. PARTS – CODE
R443	RR1220P 472D	SSM 16511-47281
R445	RR1220P 102D	SSM 16511-10281
R446	RR1220P 101D	SSM 16511-10181
R447	RR1220P 472D	SSM 16511-47281
R448	RR1220P 332D	SSM 16511-33281
R449	RR1220Q 330F	SSM 16511-33081
R450	RR1220P 332D	SSM 16511-33281
R451	RR1220P 102D	SSM 16511-10281
R452	RR1220P 103D	SSM 16511-10381
R453	RR1220P 103D	SSM 16511-10381
R454	RR1220P 103D	SSM 16511-10381
R455	RR1220P 222D	SSM 16511-22281
R463	RR1220P 392D	SSM 16511-39281
R464	RR1220P 392D	SSM 16511-39281
R501	ERDS1VJ 100 T	MAT 12106-10033
R502	ERDS1VJ 100 T	MAT 12106-10033
R509	RR1220P 752D	SSM 16511-75281
R517	RR1220P 392D	SSM 16511-39281
R518	RR1220P 392D	SSM 16511-39281
R519	RR1220P 101D	SSM 16511-10181
R520	RR1220P 472D	SSM 16511-47281
R521	RR1220P 683D	SSM 16511-68381
R522	RR1220P 152D	SSM 16511-15281
R523	※	
R525	RR1220P 104D	SSM 16511-10481
R526	RR1220P 682D	SSM 16511-68281
R531	RR1220P 101D	SSM 16511-10181
R532	RR1220P 682D	SSM 16511-68281
R534	RR1220P 103D	SSM 16511-10381
R535	RR1220P 103D	SSM 16511-10381
R536	※	
R537	RR1220P 101D	SSM 16511-10181
R538	RR1220Q 470F	SSM 16511-47081
R539	RR1220P 103D	SSM 16511-10381
R540	RR1220P 103D	SSM 16511-10381
R541	RR1220P 333D	SSM 16511-33381
R542	RR1220P 123D	SSM 16511-12381
R543	RR1220P 472D	SSM 16511-47281
R545	RR1220P 102D	SSM 16511-10281
R546	RR1220P 101D	SSM 16511-10181
R547	RR1220P 472D	SSM 16511-47281
R548	RR1220P 332D	SSM 16511-33281
R549	RR1220Q 330F	SSM 16511-33081
R556	RR1220P 103D	SSM 16511-10381
R557	RR1220P 103D	SSM 16511-10381
R563	RR1220P 392D	SSM 16511-39281
R564	RR1220P 392D	SSM 16511-39281
R601	ERDS1VJ 100 T	MAT 12106-10033
R602	ERDS1VJ 100 T	MAT 12106-10033
R603	RR1220P 101D	SSM 16511-10181
R604	RR1220P 222D	SSM 16511-22281
R605	RR1220P 222D	SSM 16511-22281
R606	RR1220P 101D	SSM 16511-10181
R607	RR1220P 222D	SSM 16511-22281
R608	RR1220P 272D	SSM 16511-27281
R609	RR1220P 752D	SSM 16511-75281
R610	RR1220P 153D	SSM 16511-15381
R611	RR1220P 103D	SSM 16511-10381
R612	RR1220P 473D	SSM 16511-47381
R613	RR1220P 102D	SSM 16511-10281
R614	RR1220P 682D	SSM 16511-68281
R615	RR1220P 681D	SSM 16511-68181
R616	RR1220P 182D	SSM 16511-18281
R617	RR1220P 392D	SSM 16511-39281
R618	RR1220P 392D	SSM 16511-39281
R619	RR1220P 101D	SSM 16511-10181
R620	RR1220P 472D	SSM 16511-47281
R621	RR1220P 683D	SSM 16511-68381
R622	RR1220P 152D	SSM 16511-15281
R623	※	
R625	RR1220P 104D	SSM 16511-10481
R626	RR1220P 682D	SSM 16511-68281
R631	RR1220P 101D	SSM 16511-10181
R632	RR1220P 682D	SSM 16511-68281
R634	RR1220P 103D	SSM 16511-10381
R635	RR1220P 103D	SSM 16511-10381
R636	※	
R637	RR1220P 101D	SSM 16511-10181
R638	RR1220Q 470F	SSM 16511-47081
R639	RR1220P 103D	SSM 16511-10381
R640	RR1220P 103D	SSM 16511-10381
R641	RR1220P 333D	SSM 16511-33381
R642	RR1220P 123D	SSM 16511-12381
R643	RR1220P 472D	SSM 16511-47281
R645	RR1220P 102D	SSM 16511-10281
R646	RR1220P 101D	SSM 16511-10181
R647	RR1220P 472D	SSM 16511-47281
R648	RR1220P 332D	SSM 16511-33281
R649	RR1220Q 330F	SSM 16511-33081
R650	RR1220P 332D	SSM 16511-33281
R651	RR1220P 102D	SSM 16511-10281
R655	RR1220P 222D	SSM 16511-22281
R658	RR1220P 101D	SSM 16511-10181
R659	RR1220P 222D	SSM 16511-22281
R660	RR1220P 222D	SSM 16511-22281
R661	RR1220P 102D	SSM 16511-10281
R662	RR1220P 333D	SSM 16511-33381
R663	RR1220P 392D	SSM 16511-39281
R664	RR1220P 392D	SSM 16511-39281
R701	RR1220P 103D	SSM 16511-10381
R702	RR1220P 103D	SSM 16511-10381
R703	RR1220P 472D	SSM 16511-47281
R704	RR1220P 103D	SSM 16511-10381
R705	RR1220P 103D	SSM 16511-10381
R706	RR1220P 103D	SSM 16511-10381
R707	RR1220P 103D	SSM 16511-10381
R708	RR1220P 103D	SSM 16511-10381
R709	RR1220P 472D	SSM 16511-47281

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* 20/30SERIES *
* VIDEO OUT BOARD *
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<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R710	RR1220P 472D	SSM	16511-47281
R711	RMC 1/10 180KΩ F	KMY	16511-18481
R712	RR1220P 152D	SSM	16511-15281
R713	RR1220P 222D	SSM	16511-22281
R714	RR1220P 222D	SSM	16511-22281
R715	RR1220P 203D	SSM	16511-20381
R716	RR1220P 223D	SSM	16511-22381
R717	ERDS1VJ 100 T	MAT	12106-10033
R718	ERDS1VJ 100 T	MAT	12106-10033
R719	RMC 1/10 180KΩ F	KMY	16511-18481

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C102	ECEA 1EU470 B	MAT	20123-47625
C103	CM21CH 6R8C 25VA T W0	KYC	26061-06825
C104	CM21CH 220J 25VA T J1	KYC	26061-22025
C105	CM21W5R 473M 25VA T S4	KYC	26062-47325
C106	CM21CH 470J 25VA T S1	KYC	26061-47025
C107	ECEA 1JU100 B	MAT	20123-10663
C109	GRM40B 104M6305-R	MUR	26183-10425
C112	CM21W5R 473M 25VA T S4	KYC	26062-47325
C113	ECEA 1EU471 B	MAT	20123-47725
C114	CM21W5R 473M 25VA T S4	KYC	26062-47325
C115	ECEA 1EU101 B	MAT	20123-10725
C116	CM21CH 270J 25VA T L1	KYC	26061-27025
C119	CM21W5R 473M 25VA T S4	KYC	26062-47325
C202	ECEA 1EU470 B	MAT	20123-47625
C203	CM21CH 6R8C 25VA T W0	KYC	26061-06825
C204	CM21CH 220J 25VA T J1	KYC	26061-22025
C205	CM21W5R 473M 25VA T S4	KYC	26062-47325
C206	CM21CH 470J 25VA T S1	KYC	26061-47025
C207	ECEA 1JU100 B	MAT	20123-10663
C208	ECEA 1HN 010SB (20SERIES)	MAT	20129-10550
	ECEA 1EN 100SB (30SERIES)	MAT	20129-10625
C209	GRM40B 104M6305-R	MUR	26183-10425
C211	ECEA 1JU100 B	MAT	20123-10663
C212	CM21W5R 473M 25VA T S4	KYC	26062-47325
C213	ECEA 1EU471 B	MAT	20123-47725
C214	CM21W5R 473M 25VA T S4	KYC	26062-47325
C215	ECEA 1EU101 B	MAT	20123-10725
C216	CM21CH 270J 25VA T L1	KYC	26061-27025
C217	CM21W5R 473M 25VA T S4	KYC	26062-47325
C218	CM21W5R 473M 25VA T S4	KYC	26062-47325
C219	CM21W5R 473M 25VA T S4	KYC	26062-47325
C302	ECEA 1EU470 B	MAT	20123-47625
C303	CM21CH 6R8C 25VA T W0	KYC	26061-06825
C304	CM21CH 220J 25VA T J1	KYC	26061-22025
C305	CM21W5R 473M 25VA T S4	KYC	26062-47325
C306	CM21CH 470J 25VA T S1	KYC	26061-47025
C307	ECEA 1JU100 B	MAT	20123-10663
C309	GRM40B 104M6305-R	MUR	26183-10425
C312	CM21W5R 473M 25VA T S4	KYC	26062-47325
C313	ECEA 1EU471 B	MAT	20123-47725
C314	CM21W5R 473M 25VA T S4	KYC	26062-47325
C315	ECEA 1EU101 B	MAT	20123-10725
C316	CM21CH 270J 25VA T L1	KYC	26061-27025
C319	CM21W5R 473M 25VA T S4	KYC	26062-47325
C401	ECEA 1EU101 B	MAT	20123-10725
C402	ECEA 1EU101 B	MAT	20123-10725
C403	ECEA 1EU330 B	MAT	20123-33625
C405	ECEA 1HN 0R47S	MAT	20131-47450
C406	CM21W5R 473M 25VA T S4	KYC	26062-47325
C407	ECEA 1JU100 B	MAT	20123-10663
C408	ECEA 1JU100 B	MAT	20123-10663
C409	ECEA 1JU100 B	MAT	20123-10663
C410	CM21W5R 473M 25VA T S4	KYC	26062-47325
C411	CM21W5R 473M 25VA T S4	KYC	26062-47325
C412	CM21W5R 473M 25VA T S4	KYC	26062-47325
C413	CM21W5R 473M 25VA T S4	KYC	26062-47325
C414	CM21W5R 473M 25VA T S4	KYC	26062-47325
C415	CM21W5R 473M 25VA T S4	KYC	26062-47325
C416	ECEA 1JU100 B	MAT	20123-10663
C418	ECEA 1JU100 B	MAT	20123-10663
C420	CM21W5R 473M 25VA T S4	KYC	26062-47325
C421	CM21W5R 473M 25VA T S4	KYC	26062-47325
C501	ECEA 1EU101 B	MAT	20123-10725
C502	ECEA 1EU101 B	MAT	20123-10725
C505	ECEA 1HN 0R47S	MAT	20131-47450
C506	CM21W5R 473M 25VA T S4	KYC	26062-47325
C509	ECEA 1JU100 B	MAT	20123-10663
C510	CM21W5R 473M 25VA T S4	KYC	26062-47325
C511	CM21W5R 473M 25VA T S4	KYC	26062-47325
C512	CM21W5R 473M 25VA T S4	KYC	26062-47325
C513	CM21W5R 473M 25VA T S4	KYC	26062-47325
C514	CM21W5R 473M 25VA T S4	KYC	26062-47325
C515	CM21W5R 473M 25VA T S4	KYC	26062-47325
C520	CM21W5R 473M 25VA T S4	KYC	26062-47325
C521	CM21W5R 473M 25VA T S4	KYC	26062-47325
C601	ECEA 1EU101 B	MAT	20123-10725
C602	ECEA 1EU101 B	MAT	20123-10725
C603	ECEA 1EU330 B	MAT	20123-33625
C604	ECEA 1JU100 B	MAT	20123-10663
C605	ECEA 1HN 0R47S	MAT	20131-47450
C606	CM21W5R 473M 25VA T S4	KYC	26062-47325
C609	ECEA 1JU100 B	MAT	20123-10663
C610	CM21W5R 473M 25VA T S4	KYC	26062-47325
C611	CM21W5R 473M 25VA T S4	KYC	26062-47325
C612	CM21W5R 473M 25VA T S4	KYC	26062-47325
C613	CM21W5R 473M 25VA T S4	KYC	26062-47325
C614	CM21W5R 473M 25VA T S4	KYC	26062-47325
C615	CM21W5R 473M 25VA T S4	KYC	26062-47325
C616	ECEA 1JU100 B	MAT	20123-10663
C618	ECEA 1JU100 B	MAT	20123-10663
C619	CM21W5R 473M 25VA T S4	KYC	26062-47325

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C620	CM21W5R 473M 25VA T S4	KYC	26062-47325
C621	CM21W5R 473M 25VA T S4	KYC	26062-47325
C701	CM21W5R 473M 25VA T S4	KYC	26062-47325
C702	CM21W5R 473M 25VA T S4	KYC	26062-47325
C703	CM21W5R 473M 25VA T S4	KYC	26062-47325
C704	ECEA 1EU101 B	MAT	20123-10725
C705	CM21W5R 473M 25VA T S4	KYC	26062-47325
C706	ECEA 1EU101 B	MAT	20123-10725

<CONNECTOR>

No.	DESCRIPTION	MFD.	PARTS – CODE
J 8	PCN10A-50P-2.54DS	HIR	30333-09500

<TEST POINTS>

No.	DESCRIPTION	MFD.	PARTS – CODE
TP101	HK-2-G	MAC	39510-00200
TP102	HK-2-G	MAC	39510-00200
TP103	HK-2-G	MAC	39510-00200
TP104	HK-2-G	MAC	39510-00200
TP105	HK-2-G	MAC	39510-00200
TP201	HK-2-G	MAC	39510-00200
TP202	HK-2-G	MAC	39510-00200
TP203	HK-2-G	MAC	39510-00200
TP204	HK-2-G	MAC	39510-00200
TP205	HK-2-G	MAC	39510-00200
TP301	HK-2-G	MAC	39510-00200
TP302	HK-2-G	MAC	39510-00200
TP303	HK-2-G	MAC	39510-00200
TP304	HK-2-G	MAC	39510-00200
TP305	HK-2-G	MAC	39510-00200
TP401	HK-2-G	MAC	39510-00200
TP402	HK-2-G	MAC	39510-00200
TP501	HK-2-G	MAC	39510-00200
TP502	HK-2-G	MAC	39510-00200
TP601	HK-2-G	MAC	39510-00200
TP602	HK-2-G	MAC	39510-00200
TP701	HK-2-G	MAC	39510-00200

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* 20/30SERIES *
* RGB OUT BOARD *
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<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD.	PARTS – CODE
IC101	μPC4082C	NEC	01783-01760
IC102	μPC398C	NEC	01783-01743
IC201	μPC4082C	NEC	01783-01760
IC202	μPC398C	NEC	01783-01743
IC301	μPC4082C	NEC	01783-01760
IC302	μPC398C	NEC	01783-01743

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr101	2SA1015Y-TPE2	TOS	02822-05402
Tr102	2SA1015Y-TPE2	TOS	02822-05402
Tr103	2SA1015Y-TPE2	TOS	02822-05402
Tr104	2SA1407E	SYO	02822-10170
Tr105	2SC3601E	SYO	02824-14925
Tr106	2SC3601E	SYO	02824-14925
Tr107	2SA1407E	SYO	02822-10170
Tr108	2SC1815Y-TPE2	TOS	02824-05702
Tr201	2SA1015Y-TPE2	TOS	02822-05402
Tr202	2SA1015Y-TPE2	TOS	02822-05402
Tr203	2SA1015Y-TPE2	TOS	02822-05402
Tr204	2SA1407E	SYO	02822-10170
Tr205	2SC3601E	SYO	02824-14925
Tr206	2SC3601E	SYO	02824-14925
Tr207	2SA1407E	SYO	02822-10170
Tr208	2SC1815Y-TPE2	TOS	02824-05702
Tr301	2SA1015Y-TPE2	TOS	02822-05402
Tr302	2SA1015Y-TPE2	TOS	02822-05402
Tr303	2SA1015Y-TPE2	TOS	02822-05402
Tr304	2SA1407E	SYO	02822-10170
Tr305	2SC3601E	SYO	02824-14925
Tr306	2SC3601E	SYO	02824-14925
Tr307	2SA1407E	SYO	02822-10170
Tr308	2SC1815Y-TPE2	TOS	02824-05702

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D101	1S1588-TPB2	TOS	03812-01201
D102	1S1588-TPB2	TOS	03812-01201
D103	1S1588-TPB2	TOS	03812-01201
D104	1S1588-TPB2	TOS	03812-01201
D106	RD10EB	NEC	03513-02300
D201	1S1588-TPB2	TOS	03812-01201
D202	1S1588-TPB2	TOS	03812-01201
D203	1S1588-TPB2	TOS	03812-01201
D204	1S1588-TPB2	TOS	03812-01201
D206	RD10EB	NEC	03513-02300
D301	1S1588-TPB2	TOS	03812-01201
D302	1S1588-TPB2	TOS	03812-01201
D303	1S1588-TPB2	TOS	03812-01201
D304	1S1588-TPB2	TOS	03812-01201
D306	RD10EB	NEC	03513-02300

<VARIABLE RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VR101	GF06UT2 5KΩ	COS	15194-50200
VR201	GF06UT2 5KΩ	COS	15194-50200
VR301	GF06UT2 5KΩ	COS	15194-50200

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R101	RN26C 2C 1000ΩF T	KOA	10357-10281
R103	RN26C 2C 12KΩF T	KOA	10357-12381
R104	RN26C 2C 3300ΩF T	KOA	10357-33281
R105	RN26C 2C 1500ΩF T	KOA	10357-15281
R106	RN26C 2C 10KΩF T	KOA	10357-10381
R107	RN26C 2C 470ΩF T	KOA	10357-47181
R108※			
R109	RN26C 2C 4700ΩF T	KOA	10357-47281
R110	ERD S1VJ 102 T	MAT	12106-10233
R111	RN26C 2C 150KΩF T	KOA	10357-15481
R112	LF1/8 390ΩF-TP	TAM	10220-39101
R113	RN26C 2C 33ΩF T	KOA	10357-33081
R114	RN26C 2C 1000ΩF T	KOA	10357-10281
R115	LF1/8 56KΩF-TP	TAM	10220-56301
R117	ERG2SJ 203	MAT	11019-20343
R118	RN26C 2C 22KΩF T	KOA	10357-22381
R119	RN26C 2C 22KΩF T	KOA	10357-22381
R120	RN26C 2C 22KΩF T	KOA	10357-22381
R121	RN26C 2C 1500ΩF T	KOA	10357-15281
R124	RN26C 2C 6800ΩF T	KOA	10357-68281
R126	RN26C 2C 100ΩF T	KOA	10357-10181
R127	RN26C 2C 100ΩF T	KOA	10357-10181
R128	RN26C 2C 1000ΩF T	KOA	10357-10281
R129	RN26C 2C 1500ΩF T	KOA	10357-15281
R130	RN26C 2C 2200ΩF T	KOA	10357-22281
R131	RN26C 2C 220KΩF T	KOA	10357-22481
R132	ERD S1VJ 100 T	MAT	12106-10033
R133	ERD S1VJ 100 T	MAT	12106-10033
R201	RN26C 2C 1000ΩF T	KOA	10357-10281
R203	RN26C 2C 12KΩF T	KOA	10357-12381
R204	RN26C 2C 3300ΩF T	KOA	10357-33281
R205	RN26C 2C 1500ΩF T	KOA	10357-15281
R206	RN26C 2C 10KΩF T	KOA	10357-10381
R207	RN26C 2C 470ΩF T	KOA	10357-47181
R208※			
R209	RN26C 2C 4700ΩF T	KOA	10357-47281
R210	ERD S1VJ 102 T	MAT	12106-10233
R211	RN26C 2C 150KΩF T	KOA	10357-15481
R212	LF1/8 390ΩF-TP	TAM	10220-39101
R213	RN26C 2C 33ΩF T	KOA	10357-33081
R214	RN26C 2C 1000ΩF T	KOA	10357-10281
R215	LF1/8 56KΩF-TP	TAM	10220-56301
R217	ERG2SJ 203	MAT	11019-20343
R218	RN26C 2C 22KΩF T	KOA	10357-22381

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R219	RN26C 2C 22KΩF T	KOA	10357-22381
R220	RN26C 2C 22KΩF T	KOA	10357-22381
R221	RN26C 2C 1500ΩF T	KOA	10357-15281
R224	RN26C 2C 6800ΩF T	KOA	10357-68281
R226	RN26C 2C 100ΩF T	KOA	10357-10181
R227	RN26C 2C 100ΩF T	KOA	10357-10181
R228	RN26C 2C 1000ΩF T	KOA	10357-10281
R229	RN26C 2C 1500ΩF T	KOA	10357-15281
R230	RN26C 2C 2200ΩF T	KOA	10357-22281
R231	RN26C 2C 220KΩF T	KOA	10357-22481
R232	ERD S1VJ 100 T	MAT	12106-10033
R233	ERD S1VJ 100 T	MAT	12106-10033
R301	RN26C 2C 1000ΩF T	KOA	10357-10281
R303	RN26C 2C 12KΩF T	KOA	10357-12381
R304	RN26C 2C 3300ΩF T	KOA	10357-33281
R305	RN26C 2C 1500ΩF T	KOA	10357-15281
R306	RN26C 2C 10KΩF T	KOA	10357-10381
R307	RN26C 2C 470ΩF T	KOA	10357-47181
R308※			
R309	RN26C 2C 4700ΩF T	KOA	10357-47281
R310	ERD S1VJ 102 T	MAT	12106-10233
R311	RN26C 2C 150KΩF T	KOA	10357-15481
R312	LF1/8 390ΩF-TP	TAM	10220-39101
R313	RN26C 2C 33ΩF T	KOA	10357-33081
R314	RN26C 2C 1000ΩF T	KOA	10357-10281
R315	LF1/8 56KΩF-TP	TAM	10220-56301
R317	ERG2SJ 203	MAT	11019-20343
R318	RN26C 2C 22KΩF T	KOA	10357-22381
R319	RN26C 2C 22KΩF T	KOA	10357-22381
R320	RN26C 2C 22KΩF T	KOA	10357-22381
R321	RN26C 2C 1500ΩF T	KOA	10357-15281
R324	RN26C 2C 6800ΩF T	KOA	10357-68281
R326	RN26C 2C 100ΩF T	KOA	10357-10181
R327	RN26C 2C 100ΩF T	KOA	10357-10181
R328	RN26C 2C 1000ΩF T	KOA	10357-10281
R329	RN26C 2C 1500ΩF T	KOA	10357-15281
R330	RN26C 2C 2200ΩF T	KOA	10357-22281
R331	RN26C 2C 220KΩF T	KOA	10357-22481
R332	ERD S1VJ 100 T	MAT	12106-10033
R333	ERD S1VJ 100 T	MAT	12106-10033

<VARIABLE CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VC101	ECV1ZW 20X53T	MAT	25010-00300
VC201	ECV1ZW 20X53T	MAT	25010-00300
VC301	ECV1ZW 20X53T	MAT	25010-00300

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C101	ECEA 1EU 470 B	MAT	20123-47625
C102	ECEA 1EU 470 B	MAT	20123-47625
C103※			
C104	ECQ-M2 332KZ	MAT	22123-33277
C105	ECQ-B1H 332 JZ4	MAT	22136-33250
C106	ECQ-B1H 332 JZ4	MAT	22136-33250
C107	ECQ-B1H 222 JZ4	MAT	22136-22250
C108	NP2D 101 JT	TYO	22393-10177
C109	ECQ-V1H 104 JZ2	MAT	22137-10450
C110	ECQ-B1H 103 JZ4	MAT	22136-10350
C111	ECQ-V1H 104 JZ2	MAT	22137-10450
C112	ECQ-V1H 104 JZ2	MAT	22137-10450
C113	ECQ-E2 104KF	MAT	22129-10478
C114	ECEA 1EN 100 SB	MAT	20129-10625
C115	ECQ-V1H 104 JZ2	MAT	22137-10450
C116	ECQ-V1H 104 JZ2	MAT	22137-10450
C117	DM05C 020 D3	SOS	23097-02050
C118	DM05C 020 D3	SOS	23097-02050
C201	ECEA 1EU 470 B	MAT	20123-47625
C202	ECEA 1EU 470 B	MAT	20123-47625
C203※			
C204	ECQ-M2 332KZ	MAT	22123-33277
C205	ECQ-B1H 332 JZ4	MAT	22136-33250
C206	ECQ-B1H 332 JZ4	MAT	22136-33250
C207	ECQ-B1H 222 JZ4	MAT	22136-22250
C208	NP2D 101 JT	TYO	22393-10177
C209	ECQ-V1H 104 JZ2	MAT	22137-10450
C210	ECQ-B1H 103 JZ4	MAT	22136-10350
C211	ECQ-V1H 104 JZ2	MAT	22137-10450
C212	ECQ-V1H 104 JZ2	MAT	22137-10450
C213	ECQ-E2 104KF	MAT	22129-10478
C214	ECEA 1EN 100 SB	MAT	20129-10625
C215	ECQ-V1H 104 JZ2	MAT	22137-10450
C216	ECQ-V1H 104 JZ2	MAT	22137-10450
C217	DM05C 020 D3	SOS	23097-02050
C218	DM05C 020 D3	SOS	23097-02050
C301	ECEA 1EU 470 B	MAT	20123-47625
C302	ECEA 1EU 470 B	MAT	20123-47625
C303※			
C304	ECQ-M2 332KZ	MAT	22123-33277
C305	ECQ-B1H 332 JZ4	MAT	22136-33250
C306	ECQ-B1H 332 JZ4	MAT	22136-33250
C307	ECQ-B1H 222 JZ4	MAT	22136-22250
C308	NP2D 101 JT	TYO	22393-10177
C309	ECQ-V1H 104 JZ2	MAT	22137-10450
C310	ECQ-B1H 103 JZ4	MAT	22136-10350
C311	ECQ-V1H 104 JZ2	MAT	22137-10450
C312	ECQ-V1H 104 JZ2	MAT	22137-10450
C313	ECQ-E2 104KF	MAT	22129-10478
C314	ECEA 1EN 100 SB	MAT	20129-10625
C315	ECQ-V1H 104 JZ2	MAT	22137-10450
C316	ECQ-V1H 104 JZ2	MAT	22137-10450
C317	DM05C 020 D3	SOS	23097-02050
C318	DM05C 020 D3	SOS	23097-02050
C401	ECEA 2DU 330W	MAT	20125-33677

****
* 20/30SERIES *
* RGB OUT BOARD *
****

No.	DESCRIPTION	MFD.	PARTS – CODE
<COILS>			
L101	LF7.5-6R8K	KOA	40337-06800
L201	LF7.5-6R8K	KOA	40337-06800
L301	LF7.5-6R8K	KOA	40337-06800
<CONNECTORS>			
CN213	H1F3FC-20PA-2.54DSA	HIR	30164-18200
CN214	DF1-2P-2.5DSA	HIR	30079-00200
CN215	DF1-2P-2.5DSA	HIR	30079-00200
CN216	DF1-2P-2.5DSA	HIR	30079-00200
CN217	DF1-2P-2.5DSA	HIR	30079-00200
<TEST POINTS>			
TP101	TBP-S	IKE	
TP102	TBP-S	IKE	
TP201	TBP-S	IKE	
TP202	TBP-S	IKE	
TP301	TBP-S	IKE	
TP302	TBP-S	IKE	
<OTHERS>			
	TC45BG(T0-220)(For Tr104)	SKK	59001-01002
	TC45BG(T0-220)(For Tr105)	SKK	59001-01002
	TC45BG(T0-220)(For Tr204)	SKK	59001-01002
	TC45BG(T0-220)(For Tr205)	SKK	59001-01002
	TC45BG(T0-220)(For Tr304)	SKK	59001-01002
	TC45BG(T0-220)(For Tr305)	SKK	59001-01002
	SP123K(For104)	MIZ	55522-01230
	SP123K(For105)	MIZ	55522-01230
	SP123K(For204)	MIZ	55522-01230
	SP123K(For205)	MIZ	55522-01230
	SP123K(For304)	MIZ	55522-01230
	SP123K(For305)	MIZ	55522-01230

No. DESCRIPTION MFD. PARTS – CODE

20SERIES CRT SOCKET BOARD

No.	DESCRIPTION	MFD.	PARTS – CODE
<VARIABLE RESISTOR>			
VR1	EVM-J6U10KB26	MAT	15121-20500
<RESISTORS>			
R1	RD 50S 100J	KOA	12202-10123
R2	RD 50S 100J	KOA	12202-10123
R3	RD 50S 100J	KOA	12202-10123
R4	RD 50S 100J	KOA	12202-10123
R5	ERC 12GJ 125	MAT	13004-12523
R6	※		
R7	※		
R8	※		
R9	ERD 50VJ 100	MAT	12105-10023
<CAPACITOR>			
C1	GC01-103YZB	TDK	24181-10300
<DISCRETE WIRE CONNECTOR A'SSIES>			
CA909	ST-901410	IKE	66995-14100
CA910	ST-901411	IKE	66995-14110
CA911	ST-901412	IKE	66995-14120
CA912	ST-901413	IKE	66995-14130
<CONNECTORS>			
CN204	350766-1	AMP	30501-00950
CN929	1951P	NMO	30561-00100
	1380-TL	NMO	30562-00100
V1a	XB-0865	SMK	54307-00100
<SPARK GAPS>			
SG1	Y08Z-230B	SKO	59003-00301
SG2	Y08Z-230B	SKO	59003-00301
SG3	Y08Z-230B	SKO	59003-00301
SG4	Y08Z-230B	SKO	59003-00301
<TERMINALS>			
TB907	62409-1	AMP	30801-02400
TB908	62409-1	AMP	30801-02400

30SERIES CRT SOCKET BOARD

No.	DESCRIPTION	MFD.	PARTS – CODE
<VARIABLE RESISTOR>			
VR1	EVM-J6U10KB26	MAT	15121-20500
<RESISTORS>			
R1	ERDS2TJ 221T	MAT	12108-22113
R2	0 Ω		
R3	※ERDS2TJ 100T	MAT	12108-10013
R4	ERDS2TJ 104T	MAT	12108-10413
R5	0 Ω		
R6	※ERDS2TJ 100T	MAT	12108-10013
R7	ERC12GJ 205	MAT	13004-20523
R8	0 Ω		
R9	※ERDS2TJ 100T	MAT	12108-10013
<CAPACITOR>			
C1	GC01-103YZB	TDK	24181-10300
<COILS>			
L1	※		
L2	※		
L3	※		
<DISCRETE WIRE CONNECTOR A'SSIES>			
CA909	ST-901410	IKE	66995-14100
CA910	ST-901411	IKE	66995-14110
CA911	ST-901412	IKE	66995-14120
CA912	ST-901413	IKE	66995-14130
<CONNECTORS>			
CN204	350766-1	AMP	30501-00950
CN929	PPMH0022	MUR	
	LPF-01T-2.5C	NAT	30245-00050
CN930	PPMH0022	MUR	
	LPF-01T-2.5C	NAT	30245-00050
CN950	HPS0380-01-110	HOS	54311-00200
<SPARK GAPS>			
SK1	Y08Z-230B	SKO	59003-00301
SK2	Y08Z-230B	SKO	59003-00301
SK3	Y08Z-230B	SKO	59003-00301
SK4	Y08Z-230B	SKO	59003-00301
<TERMINALS>			
TB907	62409-1	AMP	30801-02400
TB908	62409-1	AMP	30801-02400
<TEST POINTS>			
TP1	TBPS	IKE	
TP2	TBPS	IKE	
TP3	TBPS	IKE	
TP4	TBPS	IKE	
TP5	TBPS	IKE	
TP6	TBPS	IKE	
TP7	TBPS	IKE	
TP8	TBPS	IKE	

****
* 20/30SERIES *
* DEF BOARD *
****

<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD. PARTS – CODE
IC101	NJM7812A	JRC 01392-00204
IC102	μ PD4528BC	NEC 01784-27600
IC103	LM311N	NSC 01332-00201
IC104	μ PD4053BC	NEC 01784-23000
IC105	HA11235	HIT 01211-00700
IC106	NJM7912A	JRC 01392-00504
IC201	μ PC4082C	NEC 01783-01760
IC202	μ PC4082C	NEC 01783-01760
IC203	μ PC4082C	NEC 01783-01760
IC301	LM393N	NSC 01332-01300
IC302	μ PC4082C	NEC 01783-01760
IC303	μ PC4082C	NEC 01783-01760
IC304	μ PC4082C	NEC 01783-01760
IC401	μ PC741C	NEC 01783-01851
IC402	μ PC741C	NEC 01783-01851

<TRANSISTORS>

No.	DESCRIPTION	MFD. PARTS – CODE
Tr101	2SC1815Y-TPE2	TOS 02824-05702
Tr102	2SA1015Y-TPE2	TOS 02822-05402
Tr103	2SC1815Y-TPE2	TOS 02824-05702
Tr104	2SA1015Y-TPE2	TOS 02822-05402
Tr105	2SA1015Y-TPE2	TOS 02822-05402
Tr106	2SC1815Y-TPE2	TOS 02824-05702
Tr202※		
Tr203	2SD1138C	HIT 02825-03300
Tr204	2SB861C	HIT 02823-01000
Tr301	2N3904	NEC 02821-00600
Tr302	2SA1015Y-TPE2	TOS 02822-05402
Tr303	2SD1138D	HIT 02825-03301
Tr304	2SD1415	HIT 02825-04080
Tr305	2SB1020	TOS 02823-01500
Tr306	2SD1407Y	HIT 02825-04055
Tr307	2SK614	MAT 02828-03115
Tr308	2SA1015Y-TPE2	TOS 02822-05402
Tr309	2SA1015Y-TPE2	TOS 02822-05402
Tr401	2SD668AC	HIT 02825-02601
Tr402	2SD668AC	HIT 02825-02601
Tr403	2SD1047E	SYO 02825-03220
Tr404	2SC2333K	NEC 02824-07001
Tr405	2SC4123	SYO 02824-16020
Tr406	2SC3588K	NEC 02824-14601
Tr407	2SC3588K	NEC 02824-14601
Tr408	2SC1815Y-TPE2	TOS 02824-05702
Tr409	2SC3588K	NEC 02824-14601
Tr410	2SK787	NEC 02828-03500
Tr411	2SA1015Y-TPE2	TOS 02822-05402
Tr412	2SB648AC	HIT 02823-00401
Tr413	2SD1064R/S	SYO 02825-03225
Tr414	2SB861C	HIT 02823-01000
Tr415	2SD1138C	HIT 02825-03300
Tr416	2SD668AC	HIT 02825-02601
Tr417	2SC4710	SYO 02824-21100
Tr418	2SD668AC	HIT 02825-02601
Tr419	2SD668AC	HIT 02825-02601
Tr420	2SB648AC	HIT 02823-00401
Tr421	2SD668AC	HIT 02825-02601
Tr422	2SD668AC	HIT 02825-02601
Tr423	2SD668AC	HIT 02825-02601
Tr424	2SD669AC	HIT 02825-02701
Tr425★	2SD1047E	SYO 02825-03220
Tr429	2SD668AC	HIT 02825-02601
Tr430	2SB648AC	HIT 02823-00401
Tr432	2SD668AC	HIT 02825-02601

<DIODES>

No.	DESCRIPTION	MFD. PARTS – CODE
D101	V06C	HIT 03631-00200
D102	V06C	HIT 03631-00200
D103	RD6.2EB2	NEC 03513-01604
D104	V06C	HIT 03631-00200
D105	V06C	HIT 03631-00200
D106	1S1588-TPB2	TOS 03812-01201
D107	1S1588-TPB2	TOS 03812-01201
D201	1S1588-TPB2	TOS 03812-01201
D202	1S1588-TPB2	TOS 03812-01201
D203	1S1588-TPB2	TOS 03812-01201
D204	1S1588-TPB2	TOS 03812-01201
D205	V06C	HIT 03631-00200
D206	V06C	HIT 03631-00200
D207	V06C	HIT 03631-00200
D208	V06C	HIT 03631-00200
D209	1S1588-TPB2	TOS 03812-01201
D210	RD6.8EB1	NEC 03513-01701
D301	1S1588-TPB2	TOS 03812-01201
D302	1S1588-TPB2	TOS 03812-01201
D303	MA27WA	MAT 03363-00200
D304	MA27WA	MAT 03363-00200
D305	DFH10TG	SYO 03093-00200
D306	DFH10TG	SYO 03093-00200
D307	1S1588-TPB2	TOS 03812-01201
D308	1S1588-TPB2	TOS 03812-01201
D401	1S1588-TPB2	TOS 03812-01201
D402	1S1588-TPB2	TOS 03812-01201
D403	RD10EB2	NEC 03513-02305
D404	1S1588-TPB2	TOS 03812-01201
D405	1S1588-TPB2	TOS 03812-01201
D406	V06C	HIT 03631-00200
D407	DFH10TG	SYO 03093-00200
D408	DFH10TG	SYO 03093-00200
D409	DFH10TG	SYO 03093-00200
D410	RU-4D	SKN 03518-00101

<DIODES>

No.	DESCRIPTION	MFD. PARTS – CODE
D411	HZ11B-2	HIT 03214-00710
D412	RU-4D	SKN 03518-00101
D413	RU-4D	SKN 03518-00101
D414	DFH10TG	SYO 03093-00200
D416	1S1588-TPB2	TOS 03812-01201
D417★	HZ6C-1	HIT 03214-00280
D418★	1S1588-TPB2	TOS 03812-01201
D419	DFH10TG	SYO 03093-00200
D420	RU-4D	SKN 03518-00101
D421	DFC15TR	SYO 03093-00300
D422	DFC15TR	SYO 03093-00300
D423	RD12EB1	NEC 03513-02505
D424	V06C	HIT 03631-00200
D425	1S1588-TPB2	TOS 03812-01201
D426	1S1588-TPB2	TOS 03812-01201
D427	DFH10TG	SYO 03093-00200
D428	HZ6C-3	HIT 03214-00300
D429	V06C	HIT 03631-00200
D430	DFH10TG	SYO 03093-00200
D431	HZ2B	HIT 03214-00100
D432★	HZ11A-3	HIT 03214-00700
D433	DFH10TG	SYO 03093-00200
D434	DFH10TG	SYO 03093-00200
D435	DFH10TG	SYO 03093-00200
D436	V06C	HIT 03631-00200
D437	DFH10TG	SYO 03093-00200
D441	1S1588-TPB2	TOS 03812-01201
D442	1S1588-TPB2	TOS 03812-01201

<VARIABLE RESISTORS>

No.	DESCRIPTION	MFD. PARTS – CODE
VR101	GF06UT2 2KΩ	COS 15194-20200
VR102	GF06UT2 5KΩ	COS 15194-50200
VR103	GF06UT2 2KΩ	COS 15194-20200
VR201	GF06UT2 10KΩ	COS 15194-10300
VR202	GF06UT2 10KΩ	COS 15194-10300
VR301	GF06UT2 5KΩ	COS 15194-50200
VR302	GF06UT2 500KΩ	COS 15194-50400
VR303	GF06UT2 50KΩ	COS 15194-50300
VR304	GF06UT2 10KΩ	COS 15194-10300
VR401	GF06UT2 2KΩ	COS 15194-20200
VR402★	GF06UT2 10KΩ	COS 15194-10300
VR403★	GF06UT2 1MΩ	COS 15194-10500
VR407	GF06UT2 10KΩ	COS 15194-10300

<RESISTORS>

No.	DESCRIPTION	MFD. PARTS – CODE
R101	ERD S1VJ 101 T	MAT 12106-10123
R102	ERD S2TJ 103 T	MAT 12108-10313
R103	ERD S2TJ 472 T	MAT 12108-47213
R104	ERD S2TJ 332 T	MAT 12108-33213
R105	ERD S2TJ 222 T	MAT 12108-22213
R106	ERD S2TJ 223 T	MAT 12108-22313
R107	ERD S2TJ 103 T	MAT 12108-10313
R108	ERD S2TJ 223 T	MAT 12108-22313
R109	ERD S2TJ 103 T	MAT 12108-10313
R110	ERD S2TJ 103 T	MAT 12108-10313
R111	ERD S2TJ 101 T	MAT 12108-10113
R112	ERD S2TJ 100 T	MAT 12108-10013
R114	ERD S2TJ 332 T	MAT 12108-33213
R115	ERD S2TJ 472 T	MAT 12108-47213
R116	ERD S2TJ 102 T	MAT 12108-10213
R117	ERD S2TJ 103 T	MAT 12108-10313
R118	ERD S2TJ 223 T	MAT 12108-22313
R119	ERD S1VJ 101 T	MAT 12106-10123
R120	ERD S2TJ 332 T	MAT 12108-33213
R121	ERD S2TJ 332 T	MAT 12108-33213
R122	ERD S2TJ 104 T	MAT 12108-10413
R123	ERD S2TJ 104 T	MAT 12108-10413
R124	ERD S2TJ 104 T	MAT 12108-10413
R125	ERD S2TJ 104 T	MAT 12108-10413
R126	ERD S2TJ 104 T	MAT 12108-10413
R127	ERD S2TJ 223 T	MAT 12108-22313
R128	ERD S2TJ 472 T	MAT 12108-47213
R129	ERD S2TJ 222 T	MAT 12108-22213
R130	ERD S2TJ 474 T	MAT 12108-47413
R131	ERD S2TJ 223 T	MAT 12108-22313
R132	ERD S2TJ 472 T	MAT 12108-47213
R133	ERD S2TJ 472 T	MAT 12108-47213
R134	ERD S2TJ 683 T	MAT 12108-68313
R135	ERD S2TJ 103 T	MAT 12108-10313
R136	ERD S2TJ 471 T	MAT 12108-47113
R137	ERD S2TJ 681 T	MAT 12108-68113
R138	ERD S2TJ 103 T	MAT 12108-10313
R139	ERD S1VJ 101 T	MAT 12106-10123
R140	ERD S2TJ 103 T	MAT 12108-10313
R141	ERD S2TJ 103 T	MAT 12108-10313
R142	ERD S2TJ 103 T	MAT 12108-10313
R143	ERD S2TJ 103 T	MAT 12108-10313
R144	ERD S2TJ 512 T	MAT 12108-51213
R145	ERD S2TJ 103 T	MAT 12108-10313
R146	ERD S2TJ 103 T	MAT 12108-10313
R147	ERD S2TJ 103 T	MAT 12108-10313
R148	ERD S2TJ 102 T	MAT 12108-10213
R201	ERD S2TJ 273 T	MAT 12108-27313
R202	ERD S2TJ 103 T	MAT 12108-10313
R203	ERD S2TJ 103 T	MAT 12108-10313
R204	ERD S2TJ 103 T	MAT 12108-10313
R205	ERD S2TJ 103 T	MAT 12108-10313
R206	ERD S2TJ 103 T	MAT 12108-10313
R207	ERD S2TJ 103 T	MAT 12108-10313
R208	ERD S2TJ 822 T	MAT 12108-82213
R209	ERD S2TJ 103 T	MAT 12108-10313
R210	ERD S2TJ 222 T	MAT 12108-22213
R211	ERD S2TJ 184 T	MAT 12108-18413
R212	ERD S2TJ 152 T	MAT 12108-15213
R213	ERD S2TJ 102 T	MAT 12108-10213

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• 20/30SERIES •
• DEF BOARD •
••••••••••••••••

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R214	ERD S2TJ 104 T	MAT	12108-10413
R215	ERD S2TJ 104 T	MAT	12108-10413
R216※			
R217※			
R218	ERD S2TJ 103 T	MAT	12108-10313
R219	ERD S2TJ 334 T	MAT	12108-33413
R220	ERD S2TJ 473 T	MAT	12108-47313
R221	ERD S2TJ 104 T	MAT	12108-10413
R222	ERD S2TJ 103 T	MAT	12108-10313
R223	ERD S1VJ 100 T	MAT	12106-10033
R224	ERD S1VJ 100 T	MAT	12106-10033
R225	ERD S2TJ 392 T	MAT	12108-39213
R226	ERD S2TJ 103 T	MAT	12108-10313
R227	ERD S2TJ 332 T	MAT	12108-33213
R228	ERD S2TJ 103 T	MAT	12108-10313
R229	ERD S2TJ 104 T	MAT	12108-10413
R230	ERD S2TJ 103 T	MAT	12108-10313
R231	ERD S1VJ 100 T	MAT	12106-10033
R232	ERD S2TJ 104 T	MAT	12108-10413
R301	ERD S2TJ 101 T	MAT	12108-10113
R302	RN26C 2C 470ΩF T	KOA	10357-47181
R303	RN26C 2C 68KΩF T	KOA	10357-68381
R304	RN26C 2C 220KΩF T	KOA	10357-22481
R305	RN26C 2C 22KΩF T	KOA	10357-22381
R306	RN26C 2C 5600ΩF T	KOA	10357-56281
R307	RN26C 2C 68KΩF T	KOA	10357-68381
R308	RN26C 2C 10KΩF T	KOA	10357-10381
R309	RN26C 2C 10KΩF T	KOA	10357-10381
R310	RN26C 2C 2200ΩF T	KOA	10357-22281
R311	RN26C 2E 820KΩF T	KOA	10355-82411
R313	RN26C 2C 8200ΩF T	KOA	10357-82281
R314	RN26C 2C 15KΩF T	KOA	10357-15381
R316	ERD S2TJ 470 T	MAT	12108-47013
R317	ERG 1ANJ 102	MAT	11005-10233
R318	ERG 1ANJ 102	MAT	11005-10233
R319	ERX 2ANJ 1R0	MAT	11003-01043
R320	ERD S2TJ 103 T	MAT	12108-10313
R321	ERD S2TJ 471 T	MAT	12108-47113
R322	ERD S2TJ 331 T	MAT	12108-33113
R323	ERG 2ANJ 151	MAT	11006-15143
R324	ERD S1VJ 1R0 T	MAT	12106-01023
R325	RN26C 2E 22KΩF T	KOA	10355-22311
R326	RN26C 2E 100KΩF T	KOA	10355-10411
R327	RN26C 2E 150KΩF T	KOA	10355-15411
R328	RN26C 2E 68KΩF T	KOA	10355-68311
R329	RN26C 2E 10KΩF T	KOA	10355-10311
R331	RN26C 2E 10KΩF T	KOA	10355-10311
R332	RN26C 2E 10KΩF T	KOA	10355-10311
R333	RN26C 2E 75KΩF T	KOA	10355-75311
R334	RN26C 2E 820KΩF T	KOA	10355-82411
R335	RN26C 2E 10KΩF T	KOA	10355-10311
R336	RN26C 2E 10KΩF T	KOA	10355-10311
R337	RN26C 2E 33KΩF T	KOA	10355-33311
R338	RN26C 2E 10KΩF T	KOA	10355-10311
R339	RN26C 2E 10KΩF T	KOA	10355-10311
R340	RN26C 2E 1MΩF T	KOA	10355-10511
R341	RN26C 2E 10KΩF T	KOA	10355-10311
R342	RN26C 2E 10KΩF T	KOA	10355-10311
R343	RN26C 2E 4700ΩF T	KOA	10355-47211
R344	RN26C 2E 10KΩF T	KOA	10355-10311
R345	RN26C 2E 1KΩF T	KOA	10355-10211
R346	RN26C 2E 1500ΩF T	KOA	10355-15211
R347	RN26C 2E 5600ΩF T	KOA	10355-56211
R348	RN26C 2E 470ΩF T	KOA	10355-47111
R349	RN26C 2E 10KΩF T	KOA	10355-10311
R350	ERX 2ANJ 1R0	MAT	11003-01043
R351	ERD S1VJ 100 T	MAT	12106-10033
R352	ERD S1VJ 100 T	MAT	12106-10033
R353	RN26C 2E 1MΩF T	KOA	10355-10511
R354	ERD S2TJ 152 T	MAT	12108-15213
R401	ERD S1VJ 100 T	MAT	12106-10033
R402	ERD S1VJ 100 T	MAT	12106-10033
R403	RN26C 2E 18KΩF T	KOA	10355-18311
R404	RN26C 2E 6800ΩF T	KOA	10355-68211
R405	RN26C 2E 1500ΩF T	KOA	10355-15211
R407	ERD S2TJ 153 T	MAT	12108-15313
R408	RN26C 2E 100KΩF T	KOA	10355-10411
R409	ERD S2TJ 471 T	MAT	12108-47113
R410	ERG 1ANJ 103	MAT	11005-10333
R411	ERD S2TJ 221 T	MAT	12108-22113
R412	ERD S2TJ 221 T	MAT	12108-22113
R413	ERD S2TJ 104 T	MAT	12108-10413
R414	ERD S2TJ 102 T	MAT	12108-10213
R415	ERD S2TJ 152 T	MAT	12108-15213
R416	ERG 2ANJ 473	MAT	11006-47343
R417	ERG 2ANJ 471	MAT	11006-47143
R418	ERG 2ANJ 471	MAT	11006-47143
R419	ERX 2ANJ 1R0	MAT	11003-01043
R420	ERD S2TJ 681 T	MAT	12108-68113
R421	RN26C 2E 51KΩF T	KOA	10355-51311
R422	SN14C2H 1R5MΩF	KOA	10058-15521
R423	SN14C2H 1R5MΩF	KOA	10058-15521
R424	ERC 1GJ 104	MAT	13005-10433
R425	ERC 1GJ 244	MAT	13005-24433
R426	ERG 2ANJ 331	MAT	11006-33143
R427	ERD S2TJ 103 T	MAT	12108-10313
R428	ERD S2TJ 332 T	MAT	12108-33213
R429★	ERD S2TJ 332 T	MAT	12108-33213
R430	ERD S2TJ 103 T	MAT	12108-10313
R431	ERD S2TJ 472 T	MAT	12108-47213
R432	ERD S2TJ 472 T	MAT	12108-47213
R433	ERD S2TJ 103 T	MAT	12108-10313
R434	ERD S2TJ 150 T	MAT	12108-15013
R435	ERC 1GJ 514	MAT	13005-51433
R436	ERC 1GJ 514	MAT	13005-51433
R437	ERD S2TJ 334 T	MAT	12108-33413
R438	ERD S2TJ 103 T	MAT	12108-10313
R439	ERD S2TJ 104 T	MAT	12108-10413
R440	ERD S1VJ 101 T	MAT	12106-10123

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R441	ERD S1VJ 100 T	MAT	12106-10033
R442	ERD S1VJ 100 T	MAT	12106-10033
R443	ERD S2TJ 104 T	MAT	12108-10413
R444	ERD S2TJ 473 T	MAT	12108-47313
R445	ERD S2TJ 332 T	MAT	12108-33213
R446	ERD S2TJ 221 T	MAT	12108-22113
R447	ERD S2TJ 221 T	MAT	12108-22113
R448	ERD S2TJ 103 T	MAT	12108-10313
R449	ERD S2TJ 221 T	MAT	12108-22113
R450	ERX 1ANJ 2R2	MAT	11002-02233
R451	ERX 1ANJ 2R2	MAT	11002-02233
R452	ERD S2TJ 152 T	MAT	12108-15213
R453	ERC 12GJ 226	MAT	13004-22623
R454	ERC 12GJ 226	MAT	13004-22623
R455	ERC 12GJ 305	MAT	13004-30523
R456	ERD S2TJ 333 T	MAT	12108-33313
R457	ERD S2TJ 332 T	MAT	12108-33213
R458	ERD S2TJ 683 T	MAT	12108-68313
R459	ERD S2TJ 101 T	MAT	12108-10113
R460★	RN26C 2E 120KΩF T	KOA	10355-12411
R461	ERD S2TJ 224 T	MAT	12108-22413
R462	ERD S2TJ 222 T	MAT	12108-22213
R463	ERD S2TJ 332 T	MAT	12108-33213
R464	ERD S1VJ 153	MAT	12111-15313
R465	ERD S2TJ 103 T	MAT	12108-10313
R466★	ERD S1VJ 153	MAT	12111-15313
R467★	ERD S2TJ 332 T	MAT	12108-33213
R468★	ERD S2TJ 103 T	MAT	12108-10313
	(For 20SERIES)		
	ERD S2TJ 824	MAT	
	(For 30SERIES)		
R469	ERX 2ANJ 2R2	MAT	11003-02243
R470	ERD S2TJ 221 T	MAT	12108-22113
R471	ERD S2TJ 333 T	MAT	12108-33313
R472	ERD S2TJ 224 T	MAT	12108-22413
R495	ERD S2TJ 104 T	MAT	12108-10413
R496	ERD S2TJ 101 T	MAT	12108-10113
R497	ERD S2TJ 101 T	MAT	12108-10113
R500	ERD S2TJ 123 T	MAT	12108-12313
	(For 20SERIES)		
※	(For 30SERIES)		
R501	ERD S2TJ 103 T	MAT	12108-10313
R502	RN26C 2E 4700ΩF T	MAT	10355-47211
R504	ERC 12GJ 103	MAT	13004-10323

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C101	ECEA 1EU 330 B	MAT	20123-33625
C102	ECEA 1EU 330 B	MAT	20123-33625
C103	NP 2D 221 JT	TYO	22393-22177
C104	ECQ-V1H 104 JZ2	MAT	22137-10450
C105	NP 2D 221 JT	TYO	22393-22177
C106	ECQ-V1H 472 JZ2	MAT	22137-47250
C107	ECEA 1EU 330 B	MAT	20123-33625
C108	ECQ-B1H 103 JZ4	MAT	22136-10350
C109	ECEA 1EU 471 B	MAT	20123-47725
C110	ECEA 1EU 471 B	MAT	20123-47725
C111	ECQ-B1H 103 JZ4	MAT	22136-10350
C112	ECQ-B1H 103 JZ4	MAT	22136-10350
C113	DN1V R47 M1S	NEC	21091-47435
C114	DN1V 010 M1S	NEC	21091-10535
C115	DN1C 4R7 M1S	NEC	21091-47516
C116	ECEA 2AU 010 B	MAT	20123-10572
C117	NP 2D 221 JT	TYO	22393-22177
C118	ECEA 2AU 010 B	MAT	20123-10572
C119	ECQ-B1H 222 JZ4	MAT	22136-22250
C120	ECQ-B1H 103 JZ4	MAT	22136-10350
C121	ECQ-P1 332JZ	MAT	22125-33272
C122	ECQ-P1 332JZ	MAT	22125-33272
C123	ECQ-V1H 473 JZ2	MAT	22137-47350
C124	ECQ-B1H 103 JZ4	MAT	22136-10350
C125	ECEA 1JU 100 B	MAT	20123-10663
C126	ECEA 1EU 330 B	MAT	20123-33625
C127	ECEA 1EU 330 B	MAT	20123-33625
C128	ECQ-B1H 472 JZ4	MAT	22136-47250
C129	ECEA 2AU 010 B	MAT	20123-10572
C130	ECQ-B1H 332 JZ4	MAT	22136-33250
C131	DN1C 2R2 M1S	NEC	21091-22516
C132	ECQ-V1H 104 JZ2	MAT	22137-10450
C133	ECQ-V1H 104 JZ2	MAT	22137-10450
C134	ECQ-V1H 104 JZ2	MAT	22137-10450
C135	ECEA 1EU 471 B	MAT	20123-47725
C136	DN 1C 101 M1S	NEC	21091-10716
C201	ECQ-B1H 103 JZ4	MAT	22136-10350
C202	ECEA 2AU 010 B	MAT	20123-10572
C203	ECEA 2AU 010 B	MAT	20123-10572
C204	ECQ-B1H 102 JZ4	MAT	22136-10250
C205	ECEA 1EU 470 B	MAT	20123-47625
C206	ECEA 1EU 470 B	MAT	20123-47625
C207	ECEA 1EU 470 B	MAT	20123-47625
C208	ECQ-V1H 104 JZ2	MAT	22137-10450
C209	ECQ-V1H 104 JZ2	MAT	22137-10450
C210	ECQ-B1H 102 JZ4	MAT	22136-10250
C301	ECEA 1EU 101 B	MAT	20123-10725
C302	ECEA 1EU 330 B	MAT	20123-33625
C303	ECEA 2AU 010 B	MAT	20123-10572
C304	ECQ-B1H 102 JZ4	MAT	22136-10250
C305	ECQ-V1H 104 JZ2	MAT	22137-10450
C306	ECEA 1EU 101 B	MAT	20123-10725
C307	ECEA 1JU 100 B	MAT	20123-10663
C308	ECEA 1HU 220 B	MAT	20123-22650
C309	ECEA 1HU 220 B	MAT	20123-22650
C310	ECEA 1EU 471 B	MAT	20123-47725
C311	ECQ-V1H 104 JZ2	MAT	22137-10450
C312	ECQ-V1H 104 JZ2	MAT	22137-10450
C313	ECEA 1EN 100 SB	MAT	20129-10625
C314	ECQ-V1H 224 JZ	MAT	22138-22450
C315	ECQ-B1H 472 JZ4	MAT	22136-47250

• 20/30SERIES •
• DEF BOARD •

No.	DESCRIPTION	MFD.	PARTS – CODE
<CAPACITORS>			
C316	ECQ-V1H 104 JZ2	MAT	22137-10450
C317	ECEA 1EU 470 B	MAT	20123-47625
C318	ECQ-V1H 104 JZ2	MAT	22137-10450
C319	ECEA 1EU 470 B	MAT	20123-47625
C320	RT-HE40TKSL 680K	KCK	24518-68050
C321	ECQ-V1H 104 JZ2	MAT	22137-10450
C322	ECQ-B1H 103 JZ4	MAT	22136-10350
C401	ECEA 1EU 101 B	MAT	20123-10725
C402	ECEA 1EU 101 B	MAT	20123-10725
C403	ECQ-B1H 103 JZ4	MAT	22136-10350
C404	ECEA 1JU 100 B	MAT	20123-10663
C405	SM160VNSN-100CI	NCH	20559-10776
C406	ECEA 2CU 470W	MAT	20125-47676
C407	ECQ-B1H 222 JZ4	MAT	22136-22250
C408	ECEA 2CU 100 B	MAT	20123-10799
C409	ECQ-F6 222 KZ	MAT	22121-22286
C410	DE0807E 471K 3KV	MUR	24100-47192
C411	ECQ-F2 223 KS	MAT	22121-22377
C412	DKR0.0033μ/2000V D00	SIN	22104-33291
C413	DKR0.0022μ/2000V D00	SIN	
C414	2.5MDQ 204M	MAR	22823-10491
C415	DHS 1.5μ/200V	SIN	
C417★	ECEA 2AU 010 B	MAT	20123-10572
C418	ECEA 1EU 470 B	MAT	20123-47625
C419	NP 2D 221 JT	TYO	22393-22177
C420	ECQ-E2 104 KF	MAT	22129-10478
C421★	DKR0.0033μ/1600V D00 (For 20SERIES)	SIN	22104-33290
	DKR0.0056μ/1600V D00 (For 30SERIES)	SIN	22104-56290
C422★	DKR0.0022μ/1600V D00 (For 20SERIES)	SIN	22104-22290
	DKR0.0047μ/1600V D00 (For 30SERIES)	SIN	22104-47290
C423★	DKR0.001μ/1600V D00	SIN	22104-10290
C424★	ECQ-V1H 473 JZ2	MAT	22137-47350
C425	ECQ-E12 104KZ	MAT	22128-10489
C426	ECQ-V1H 104 JZ2	MAT	22137-10450
C428	ECEA 1EU 330 B	MAT	20123-33625
C429	ECQ-V1H 104 JZ2	MAT	22137-10450
C430	ECEA 1EU 470 B	MAT	20123-47625
C431	ECQ-V1H 104 JZ2	MAT	22137-10450
C432	ECEA 1EU 470 B	MAT	20123-47625
C433	ECQ-V1H 104 JZ2	MAT	22137-10450
C434	ECQ-V1H 104 JZ2	MAT	22137-10450
C435	DE1207B 152K 3KV	MUR	24100-15292
C436	ECQ-V1H 104 JZ2	MAT	22137-10450
C437	DHS 1μ/200V	SIN	22097-10577
C438	NP 2D 471 JT (20SERIES)	TYO	22393-47177
	NP 2D 221 JT (30SERIES)	TYO	22393-22177
C439	SM160VNSN-100C1	NCH	20559-10776
C440	DHS 2.2μ/200V	SIN	22097-22577
C448	ECQ-E2 473 KF	MAT	22128-47378
C449	ECEA 1EU 470 B	MAT	20123-47625
C451	ECQ-B1H 472 JZ4 (For 20SERIES) ※ (For 30SERIES)	MAT	22136-47250
C452	ECQ-B1H 222 JZ4	MAT	22136-22250
C453	DE1510E 103Z 1KV	MUR	24100-10388
C454	ECQ-V1H 104 JZ2	MAT	22137-10450
C455	ECQ-V1H 104 JZ2	MAT	22137-10450
C456	ECQ-V1H 104 JZ2	MAT	22137-10450
C459	ECEA 1EU 470 B	MAT	20123-47625
<COILS>			
L401	ST-900094B	IKE	40985-00940
L402	ST-901565A	IKE	40985-15651
<TRANSFORMERS>			
T401	ETH19Y 22AY	MAT	40130-01000
T402	ST-9463A	IKE	40985-94631
T403	CT-036	TDK	40061-00360
<VARISTOR>			
VS401	ERZ15D3K-471	MAT	19007-00300
<CONNECTORS>			
CN201	HIF3BA-26PA-2.54DSA	HIR	30164-05501
CN202	DF1-14P-2.5DSA	HIR	30079-01400
CN203	DF1-10P-2.5DSA	HIR	30079-01000
CN204	350789-1	AMP	30501-01270
CN901	350792-1	AMP	30501-01300
CN902	DF1-2P-2.5DSA	HIR	30079-00200
CN903★	641828-1	AMP	30803-01820
EL201	00-8261-0333-11-852	ELC	30507-00150
	00-8261-0249-00-870	ELC	30507-00100
<TEST POINTS>			
TP101	TBPS	IKE	
TP102	TBPS	IKE	
TP103	TBPS	IKE	
TP104	TBPS	IKE	
TP301	TBPS	IKE	
TP302	TBPS	IKE	
TP303	TBPS	IKE	
TP304	TBPS	IKE	
TP401	TBPS	IKE	
TP402	TBPS	IKE	
TP403	TBPS	IKE	
TP404	TBPS	IKE	

• ~ only 30SERIES ~ •

No.	DESCRIPTION	MFD.	PARTS – CODE
<INTEGRATED CIRCUITS>			
IC403	μPC4082C	NEC	01783-01760
IC404	μPC318C	NEC	01783-01715
<TRANSISTORS>			
Tr426	2SA1015Y-TPE2	TOS	02822-05402
Tr427	2SC4710	SYO	
Tr428	2SC1815Y-TPE2	TOS	02824-05702
<DIODES>			
D438	1S1588-TPB2	TOS	03812-01201
D439	DFH10TR	SYO	03093-00201
D440	DFH10TR	SYO	03093-00201
<VARIABLE RESISTORS>			
VR404	GF06UT2 10KΩ	COS	15194-10300
VR405	GF06UT2 100KΩ	COS	15194-10400
VR406	GF06UT2 50KΩ	COS	15194-50300
<RESISTORS>			
R473	ERD S1VJ 100 T	MAT	12106-10033
R474	ERD S1VJ 100 T	MAT	12106-10033
R475	ERD S2TJ 103 T	MAT	12108-10313
R476	RN26C 2E 10KΩFT	KOA	10355-10311
R477	ERD S2TJ 103 T	MAT	12108-10313
R478	ERD S2TJ 333 T	MAT	12108-33313
R479	ERD S2TJ 103 T	MAT	12108-10313
R480	ERD S2TJ 103 T	MAT	12108-10313
R481	RN26C 2E 10KΩF T	KOA	10355-10311
R482	RN26C 2E 100KΩF T	KOA	10355-10411
R483	ERD S2TJ 393 T	MAT	12108-39313
R484	ERD S2TJ 103 T	MAT	12108-10313
R485	ERD S2TJ 103 T	MAT	12108-10313
R486	ERD S2TJ 103 T	MAT	12108-10313
R487	ERD S2TJ 223 T	MAT	12108-22313
R488	ERD S2TJ 471 T	MAT	12108-47113
R489	ERD S2TJ 101 T	MAT	12108-10113
R490	ERC 1GJ 104	MAT	13005-10433
R491	ERC 1GJ 104	MAT	13005-10433
R492	ERD S2TJ 222 T	MAT	12108-22213
R494	ERC 12GJ 473	MAT	13004-47323
<CAPACITORS>			
C441	ECEA 1EU 470 B	MAT	20123-47625
C442	ECEA 1EU 470 B	MAT	20123-47625
C443	ECQ-B1H 103 JZ4	MAT	22136-10350
C444	ECEA 2AU 010 B	MAT	20123-10572
C445	ECQ-B1H 222 JZ4	MAT	22136-22250
C446	ECEA 1EU 330 B	MAT	20123-33625
C447	ECQ-B1H 682 JZ4	MAT	22136-68250
C457	ECQ-V1H 104 JZ2	MAT	22137-10450
C458	ECQ-V1H 104 JZ2	MAT	22137-10450

• 20SERIES •
• FBT BOARD •

No.	DESCRIPTION	MFD.	PARTS – CODE
<TRANSFORMER>			
T1△★	ST-901691	IKE	40995-16910
<COIL>			
L1	ST-901565A	IKE	40995-15651
<CONNECTORS>			
CN903△	640582-1	AMP	30803-00580
CN931	TS-80P-04-V1	TAD	30423-00300

• 30SERIES •
• HV UNIT •

No.	DESCRIPTION	MFD.	PARTS – CODE
<CONNECTORS>			
CN903	640582-1	AMP	30803-00580
CN928△	PPMH0022	AMP	
	LPF-01T-2.5C	NAT	30245-00050
CN931	1-480349-0	AMP	30552-00300
CN932△	PPMH0022	AMP	
	LPF-01T-2.5C	NAT	30245-00050
<TRANSFORMERS>			
T901△★	ST-9467A	IKE	40995-94671
<MULTIPLIER>			
MF901	ST-902355	IKE	
<OTHERS>			
	H3V UR54 α	TDK	
	KE1206RTV C-RQ 4%ﾂｷ	SKK	
	NO.3484-1000	MMM	
	170121-4	AMP	30560-00170

****
* 20/30SERIES *
* POWER BOARD *
****

<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD.	PARTS – CODE
IC1△	μPC1394C	NEC	01783-02040
IC2★	TL431CLPB	TEX	01574-00711

<PHOTO COUPLER>

No.	DESCRIPTION	MFD.	PARTS – CODE
PC1△★	PS2652L/K	NEC	09451-26520

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr1	2SD669AC	HIT	02825-02701
Tr2	2SD669AC	HIT	02825-02701
Tr3	2SC2655Y	TOS	02824-08401
Tr4	2SC1815Y-TPE2	TOS	02824-05702
Tr5	2SC2752K	NEC	02824-08435
Tr6	2SA1206	NEC	02822-08500
Tr7	2SD668AC	HIT	02825-02601
Tr8	2SB648AC	HIT	02823-00401
Tr9	2SK684	HIT	02828-03180
Tr10	2SC2298B	HIT	02824-06880
Tr11	2SD1138D	HIT	02825-03301

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D1	10J4B41	TOS	03916-00500
D2	V06C	HIT	03631-00200
D3	V06C	HIT	03631-00200
D4	V06C	HIT	03631-00200
D5	V06C	HIT	03631-00200
D6	1S1588-TPB2	TOS	03812-01201
D7	HZ12A	HIT	03214-00800
D8	V06C	HIT	03631-00200
D9	V06C	HIT	03631-00200
D10	V06C	HIT	03631-00200
D11	RD10EB2	NEC	03513-02305
D12	V06C	HIT	03631-00200
D13	HZ12A	HIT	03214-00800
D14	RD6.8EB2	NEC	03513-01705
D15	HZ6B	HIT	03214-00304
D16	DFH10TG	SYO	03093-00200
D17	DFC15R	SYO	03093-00300
D18	DFH10TG	SYO	03093-00200
D19	1S1588-TPB2	TOS	03812-01201
D20	ESAD92-02	FJE	03126-00921
D21	ESAD92-02	FJE	03126-00921
D22	ESAD92-02	FJE	03126-00921
D23	RG4	SKN	03517-00200
D24	FMG-G36S	SKN	03157-03150
D26	RD6.8EB2	NEC	03513-01705
D27	1S1588-TPB2	TOS	03812-01201
D28★	RD12EB3	NEC	03513-02506
D29	1S1588-TPB2	TOS	03812-01201

<VARIABLE RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
VR1	GF06UT2 5KΩ	COS	15194-50200
VR2★	GF06UT2 1KΩ	COS	15194-10200

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R1	ERF 10ZYK 3R3	MAT	14121-03374
R2	ERG 2ANJ 222H	MAT	11025-22243
R3	ERG 2ANJ 222H	MAT	11025-22243
R4	ERDS2TJ 473 T	MAT	12108-47313
R5	ERDS2TJ 752 T	MAT	12108-75213
R6	ERDS2TJ 203 T	MAT	12108-20313
R7	ERG 1ANJ 472	MAT	11005-47233
R8	ERG 1ANJ 332	MAT	11005-33233
R9	ERG 2SJ 104	MAT	11019-10443
R10	ERG 2SJ 104	MAT	11019-10443
R11	ERG 2SJ 104	MAT	11019-10443
R12	ERG 2SJ 223	MAT	11019-22343
R13	ERDS2TJ 102 T	MAT	12108-10213
R14	ERDS2TJ 103 T	MAT	12108-10313
R15	ERDS2TJ 561 T	MAT	12108-56113
R16	ERDS2TJ 101 T	MAT	12108-10113
R17	ERG 2SJ 104	MAT	11019-10443
R18	ERG 2SJ 104	MAT	11019-10443
R19	ERDS2TJ 103 T	MAT	12108-10313
R20	ERDS1VJ 470 T	MAT	12106-47033
R21	ERX 2SJ R33	MAT	11021-98823
R22	ERDS1VJ 271 T	MAT	12106-27133
R23★	ERDS2TJ 332 T	MAT	12108-33213
R24	ERDS2TJ 473 T	MAT	12108-47313
R25	ERDS2TJ 473 T	MAT	12108-47313
R26	ERDS2TJ 332 T	MAT	12108-33213
R27★	ERDS2TJ 333 T	MAT	12108-33313
R28★	ERDS2TJ 103 T	MAT	12108-10313
R29★	ERDS2TJ 103 T	MAT	12108-10313
R30	ERDS2TJ 103 T	MAT	12108-10313
R31	ERDS2TJ 622 T	MAT	12108-62213
R32	ERDS2TJ 103 T	MAT	12108-10313
R33	ERDS2TJ 103 T	MAT	12108-10313
R34	ERDS2TJ 104 T	MAT	12108-10413
R35	ERDS2TJ 472 T	MAT	12108-47213
R36	ERDS2TJ 332 T	MAT	12108-33213
R37	ERDS2TJ 474 T	MAT	12108-47413
R38※	ERDS2TJ 273 T	MAT	12108-27313
R39	ERDS2TJ 104 T	MAT	12108-10413
R40	ERDS2TJ 101 T	MAT	12108-10113
R41	ERG 2SJ 223	MAT	11019-22343
R42	ERG 2SJ 223	MAT	11019-22343
R43★	ERDS2TJ 471 T	MAT	12108-47113
R44	ERDS2TJ 681 T	MAT	12108-68113
R45★	ERG 2SJ 104	MAT	11019-10443
R46★	ERDS2TJ 471 T	MAT	12108-47113
R47★	ERDS2TJ 182 T	MAT	12108-18213
R48	ERDS2TJ 223 T	MAT	12108-22313
R49	ERDS1VJ 750 T	MAT	12106-75023
R50	ERDS2TJ 472 T	MAT	12108-47213

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C1△	XE224	OKA	22692-22478
C2△	XE224	OKA	22692-22478
C3△	ECKDNS 222MEX	MAT	24122-22200
C4△	ECKDNS 222MEX	MAT	24122-22200
C5	ECEA 1JU 101	MAT	20125-10763
C6	ECEA 1EU 470 B	MAT	20123-47625
C7	ECEA 1JU 100 B	MAT	20123-10663
C8	ECEA 1JU 100 B	MAT	20123-10663
C9	ECEA 1JU 100 B	MAT	20123-10663
C10	ECOS 2DG 681T	MAT	20142-68777
C11	ECOS 2DG 681T	MAT	20142-68777
C12	ECEA 1EU 470 B	MAT	20123-47625
C13	ECEA 2AU 1R0 B	MAT	20123-10572
C14	DFZ 104J 400V	SIN	22102-10483
C15	DFZ 104J 400V	SIN	22102-10483
C16	*		
C17△	ECKDNS 222MEX	MAT	24122-22200
C18△	ECKDNS 222MEX	MAT	24122-22200
C19	ECEA 1EGE 101	MAT	20137-10725
C20	ECEA 1JU 100 B	MAT	20123-10663
C21	ECQ-B1H 223 JZ4	MAT	22136-22350
C22	NP2D 471 JT	TYO	22393-47177
C23	ECQ-B1H 103 JZ4	MAT	22136-10350
C24	ECEA 1EU 330 B	MAT	20123-33625
C25	ECEA 1EU 101 B	MAT	20123-10725
C26	NP2D 471 JT	TYO	22393-47177
C27	ECEA 2AU 1R0 B	MAT	20123-10572
C28	ECEA 1CGE 102	MAT	20137-10816
C29	ECEA 1EGE 222	MAT	20137-22825
C30	ECEA 1EU 470 B	MAT	20123-47625
C31	ECEA 1EU 330 B	MAT	20123-33625
C32	ECEA 1EGE 222	MAT	20137-22825
C33	ECEA 1EU 470 B	MAT	20123-47625
C35	ECOS 2DG 681T	MAT	20142-68777
C36	ECEA 2AGE 101	MAT	
C37	ECEA 2EU 3R3	MAT	20125-33578
C38	ECQ-E2 104KS	MAT	22128-10477
C39	ECQ-V1H 104 JZ2	MAT	22137-10450
C40	ECEA 2EGE 100	MAT	
C41	ECQ-E2 104KS	MAT	22128-10477
C43	ECEA 1JU 101	MAT	20125-10763

<TRANSFORMERS>

No.	DESCRIPTION	MFD.	PARTS – CODE
T1△★	ST-902351A	IKE	
T2△	ST-901544	IKE	40985-15440

<INDUCTANCE COILS>

No.	DESCRIPTION	MFD.	PARTS – CODE
L1	AB4X2X6	TOS	42101-00400
L2	AB4X2X6	TOS	42101-00400
L3	AB4X2X6	TOS	42101-00400
L4	AB4X2X6	TOS	42101-00400
L5	AB4X2X6	TOS	42101-00400
L6	AB4X2X6	TOS	42101-00400
L7	SA7X6X4.5D	TOS	40559-00300
L9	TSL1110-101K 1RO	TDK	40586-00304
L10	TSL0707-221K R44	TDK	40586-00104
L11	AB4X2X6	TOS	42101-00400
L12	TSL1110-101K 1RO	TDK	40586-00304

<LINE FILTER>

No.	DESCRIPTION	MFD.	PARTS – CODE
FL1△	ST-901163	IKE	43995-11630

<RELAYS>

No.	DESCRIPTION	MFD.	PARTS – CODE
RL1△	AJR 3231	MAT	46007-00110
RL2△	AJW 7211	MAT	46007-03720
RL3△	AJW 3211	MAT	46007-03320

<VARISTOR>

No.	DESCRIPTION	MFD.	PARTS – CODE
VS1	ERZ-08D 3K101	MAT	19007-00700

<THERMISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
TH1△	ERP-F5B-0M050F	MAT	19004-00400
TH2△	ERP-F5B-0M180H	MAT	19004-00500

<CONNECTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
CN206	DF1-7P-2.5DSA	HIR	30079-00700
CN207	DF1-14P-2.5DSA	HIR	30079-01400
CN804△	350792-1	AMP	30501-01300
CN920△	350789-1	AMP	30501-01270
CN921△	350786-1	AMP	30501-01250

<TEST POINTS>

No.	DESCRIPTION	MFD.	PARTS – CODE
TP1	TBPS	IKE	
TP2	TBPS	IKE	
TP3	TBPS	IKE	
TP4	TBPS	IKE	
TP5	TBPS	IKE	
TP7	TBPS	IKE	

<OTHERS>

No.	DESCRIPTION	MFD.	PARTS – CODE
TC80A(CP-TO-3P)	(For Tr9)	SKK	59001-01050
TC45BG(TO-3P)	(For D20,21,22)	SKK	59001-01000
TC45BG(TO-220)	(For Tr1,2)	SKK	59001-01002

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• 20/30SERIES •
• CONNECTOR BOARD •
••••••••••••••••••••

<TRANSISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
Tr101	2SC1815Y-TPE2	TOS	02824-05702
Tr102	2SC1815Y-TPE2	TOS	02824-05702
Tr103	2SC1815Y-TPE2	TOS	02824-05702
Tr104	2SC1815Y-TPE2	TOS	02824-05702
Tr201	2SC1815Y-TPE2	TOS	02824-05702
Tr202	2SC1815Y-TPE2	TOS	02824-05702
Tr203	2SC1815Y-TPE2	TOS	02824-05702
Tr204	2SC1815Y-TPE2	TOS	02824-05702
Tr301	2SC1815Y-TPE2	TOS	02824-05702
Tr302	2SC1815Y-TPE2	TOS	02824-05702
Tr303	2SC1815Y-TPE2	TOS	02824-05702
Tr304	2SC1815Y-TPE2	TOS	02824-05702
Tr401	2SC1815Y-TPE2	TOS	02824-05702
Tr402	2SC1815Y-TPE2	TOS	02824-05702
Tr403	2SC1815Y-TPE2	TOS	02824-05702
Tr404	2SC1815Y-TPE2	TOS	02824-05702
Tr501	2SC1815Y-TPE2	TOS	02824-05702
Tr502	2SC1815Y-TPE2	TOS	02824-05702
Tr503	2SC1815Y-TPE2	TOS	02824-05702
Tr504	2SC1815Y-TPE2	TOS	02824-05702
Tr601	2SC1815Y-TPE2	TOS	02824-05702
Tr602	2SC1815Y-TPE2	TOS	02824-05702
Tr603	2SC1815Y-TPE2	TOS	02824-05702
Tr604	2SC1815Y-TPE2	TOS	02824-05702
Tr701	2SC1815Y-TPE2	TOS	02824-05702
Tr702	2SC1815Y-TPE2	TOS	02824-05702
Tr703	2SC1815Y-TPE2	TOS	02824-05702
Tr704	2SC1815Y-TPE2	TOS	02824-05702

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D101	RD3.9EB	NEC	03513-00800
D102	RD3.9EB	NEC	03513-00800
D201	RD3.9EB	NEC	03513-00800
D202	RD3.9EB	NEC	03513-00800
D301	RD3.9EB	NEC	03513-00800
D302	RD3.9EB	NEC	03513-00800
D401	RD3.9EB	NEC	03513-00800
D402	RD3.9EB	NEC	03513-00800
D501	RD3.9EB	NEC	03513-00800
D502	RD3.9EB	NEC	03513-00800
D601	RD3.9EB	NEC	03513-00800
D602	RD3.9EB	NEC	03513-00800
D701	RD3.9EB	NEC	03513-00800
D702	RD3.9EB	NEC	03513-00800

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R101	RN26C 2C 47KΩ F T	KOA	10357-47381
R102	LF1/8 1300Ω F-TP	TAM	10220-13201
R103	RN26C 2C 6800Ω F T	KOA	10357-68281
R104	RN26C 2C 330Ω F T	KOA	10357-33181
R105	LF1/8 1300Ω F-TP	TAM	10220-13201
R106	RN26C 2C 330Ω F T	KOA	10357-33181
R107	RN26C 2C 100Ω F T	KOA	10357-10181
R108	RN26C 2C 470Ω F T	KOA	10357-47181
R109	RN26C 2C 10KΩ F T	KOA	10357-10381
R110	RN26C 2C 18KΩ F T	KOA	10357-18381
R111	RN26C 2C 47KΩ F T	KOA	10357-47381
R112	RN26C 2C 100Ω F T	KOA	10357-10181
R113	RN26C 2C 1KΩ F T	KOA	10357-10281
R201	RN26C 2C 47KΩ F T	KOA	10357-47381
R202	LF1/8 1300Ω F-TP	TAM	10220-13201
R203	RN26C 2C 6800Ω F T	KOA	10357-68281
R204	RN26C 2C 330Ω F T	KOA	10357-33181
R205	LF1/8 1300Ω F-TP	TAM	10220-13201
R206	RN26C 2C 330Ω F T	KOA	10357-33181
R207	RN26C 2C 100Ω F T	KOA	10357-10181
R208	RN26C 2C 470Ω F T	KOA	10357-47181
R209	RN26C 2C 10KΩ F T	KOA	10357-10381
R210	RN26C 2C 18KΩ F T	KOA	10357-18381
R211	RN26C 2C 47KΩ F T	KOA	10357-47381
R212	RN26C 2C 100Ω F T	KOA	10357-10181
R213	RN26C 2C 1KΩ F T	KOA	10357-10281
R301	RN26C 2C 47KΩ F T	KOA	10357-47381
R302	LF1/8 1300Ω F-TP	TAM	10220-13201
R303	RN26C 2C 6800Ω F T	KOA	10357-68281
R304	RN26C 2C 330Ω F T	KOA	10357-33181
R305	LF1/8 1300Ω F-TP	TAM	10220-13201
R306	RN26C 2C 330Ω F T	KOA	10357-33181
R307	RN26C 2C 100Ω F T	KOA	10357-10181
R308	RN26C 2C 470Ω F T	KOA	10357-47181
R309	RN26C 2C 10KΩ F T	KOA	10357-10381
R310	RN26C 2C 18KΩ F T	KOA	10357-18381
R311	RN26C 2C 47KΩ F T	KOA	10357-47381
R312	RN26C 2C 100Ω F T	KOA	10357-10181
R313	RN26C 2C 1KΩ F T	KOA	10357-10281
R401	RN26C 2C 47KΩ F T	KOA	10357-47381
R402	LF1/8 1300Ω F-TP	TAM	10220-13201
R403	RN26C 2C 6800Ω F T	KOA	10357-68281
R404	RN26C 2C 330Ω F T	KOA	10357-33181
R405	LF1/8 1300Ω F-TP	TAM	10220-13201
R406	RN26C 2C 330Ω F T	KOA	10357-33181
R407	RN26C 2C 100Ω F T	KOA	10357-10181
R408	RN26C 2C 470Ω F T	KOA	10357-47181
R409	RN26C 2C 10KΩ F T	KOA	10357-10381
R410	RN26C 2C 18KΩ F T	KOA	10357-18381
R411	RN26C 2C 47KΩ F T	KOA	10357-47381
R412	RN26C 2C 100Ω F T	KOA	10357-10181
R413	RN26C 2C 1KΩ F T	KOA	10357-10281
R501	RN26C 2C 47KΩ F T	KOA	10357-47381
R502	LF1/8 1300Ω F-TP	TAM	10220-13201
R503	RN26C 2C 6800Ω F T	KOA	10357-68281
R504	RN26C 2C 330Ω F T	KOA	10357-33181
R505	LF1/8 1300Ω F-TP	TAM	10220-13201
R506	RN26C 2C 330Ω F T	KOA	10357-33181
R507	RN26C 2C 100Ω F T	KOA	10357-10181
R508	RN26C 2C 470Ω F T	KOA	10357-47181
R509	RN26C 2C 10KΩ F T	KOA	10357-10381
R510	RN26C 2C 18KΩ F T	KOA	10357-18381
R511	RN26C 2C 47KΩ F T	KOA	10357-47381
R512	RN26C 2C 100Ω F T	KOA	10357-10181
R513	RN26C 2C 1KΩ F T	KOA	10357-10281
R601	RN26C 2C 47KΩ F T	KOA	10357-47381
R602	LF1/8 1300Ω F-TP	TAM	10220-13201
R603	RN26C 2C 6800Ω F T	KOA	10357-68281
R604	RN26C 2C 330Ω F T	KOA	10357-33181
R605	LF1/8 1300Ω F-TP	TAM	10220-13201
R606	RN26C 2C 330Ω F T	KOA	10357-33181
R607	RN26C 2C 100Ω F T	KOA	10357-10181
R608	RN26C 2C 470Ω F T	KOA	10357-47181
R609	RN26C 2C 10KΩ F T	KOA	10357-10381
R610	RN26C 2C 18KΩ F T	KOA	10357-18381
R611	RN26C 2C 47KΩ F T	KOA	10357-47381
R612	RN26C 2C 100Ω F T	KOA	10357-10181
R613	RN26C 2C 1KΩ F T	KOA	10357-10281
R701	RN26C 2C 47KΩ F T	KOA	10357-47381
R702	RN26C 2C 1KΩ F T	KOA	10357-10281
R703	*		
R704	RN26C 2C 1500Ω F T	KOA	10357-15281
R705	RN26C 2C 1KΩ F T	KOA	10357-10281
R706	RN26C 2C 1500Ω F T	KOA	10357-15281
R707	RN26C 2C 100Ω F T	KOA	10357-10181
R708	RN26C 2C 1KΩ F T	KOA	10357-10281
R709	RN26C 2C 10KΩ F T	KOA	10357-10381
R710	RN26C 2C 33KΩ F T	KOA	10357-33381
R711	RN26C 2C 47KΩ F T	KOA	10357-47381
R712	RN26C 2C 100Ω F T	KOA	10357-10181
R713	RN26C 2C 10KΩ F T	KOA	10357-10381
R801	ERD S1VJ 100 T	MAT	12106-10033
R802	ERD S1VJ 100 T	MAT	12106-10033

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C101	DM05C 150 J3	SOS	23097-15050
C102	ECEA 1EN 100 SB	MAT	20129-10625
C103	ECEA 1EN 100 SB	MAT	20129-10625
C104	DM05C 070 D3	SOS	23097-07050
C105	ECQ-V1H 104 JZ2	MAT	22137-10450
C106	ECQ-V1H 104 JZ2	MAT	22137-10450
C107	ECQ-V1H 104 JZ2	MAT	22137-10450
C201	DM05C 150 J3	SOS	23097-15050
C202	ECEA 1EN 100 SB	MAT	20129-10625
C203	ECEA 1EN 100 SB	MAT	20129-10625
C204	DM05C 070 D3	SOS	23097-07050
C205	ECQ-V1H 104 JZ2	MAT	22137-10450
C206	ECQ-V1H 104 JZ2	MAT	22137-10450
C207	ECQ-V1H 104 JZ2	MAT	22137-10450
C301	DM05C 150 J3	SOS	23097-15050
C302	ECEA 1EN 100 SB	MAT	20129-10625
C303	ECEA 1EN 100 SB	MAT	20129-10625
C304	DM05C 070 D3	SOS	23097-07050
C305	ECQ-V1H 104 JZ2	MAT	22137-10450
C306	ECQ-V1H 104 JZ2	MAT	22137-10450
C307	ECQ-V1H 104 JZ2	MAT	22137-10450
C401	DM05C 150 J3	SOS	23097-15050
C402	ECEA 1EN 100 SB	MAT	20129-10625
C403	ECEA 1EN 100 SB	MAT	20129-10625
C404	DM05C 070 D3	SOS	23097-07050
C405	ECQ-V1H 104 JZ2	MAT	22137-10450
C406	ECQ-V1H 104 JZ2	MAT	22137-10450
C407	ECQ-V1H 104 JZ2	MAT	22137-10450
C501	DM05C 150 J3	SOS	23097-15050
C502	ECEA 1EN 100 SB	MAT	20129-10625
C503	ECEA 1EN 100 SB	MAT	20129-10625
C504	DM05C 070 D3	SOS	23097-07050
C505	ECQ-V1H 104 JZ2	MAT	22137-10450
C506	ECQ-V1H 104 JZ2	MAT	22137-10450
C507	ECQ-V1H 104 JZ2	MAT	22137-10450
C601	DM05C 150 J3	SOS	23097-15050
C602	ECEA 1EN 100 SB	MAT	20129-10625
C603	ECEA 1EN 100 SB	MAT	20129-10625
C604	DM05C 070 D3	SOS	23097-07050
C605	ECQ-V1H 104 JZ2	MAT	22137-10450
C606	ECQ-V1H 104 JZ2	MAT	22137-10450
C607	ECQ-V1H 104 JZ2	MAT	22137-10450
C702	ECEA 1EN 100 SB	MAT	20129-10625
C703	ECEA 1EN 100 SB	MAT	20129-10625
C704	*		
C705	ECQ-V1H 104 JZ2	MAT	22137-10450
C706	ECQ-V1H 104 JZ2	MAT	22137-10450
C707	ECQ-V1H 104 JZ2	MAT	22137-10450
C801	ECEA 1CK 101 B	MAT	20128-10716
C802	ECEA 1CK 101 B	MAT	20128-10716

20/30SERIES
CONNECTOR BOARD

No.	DESCRIPTION	MFD.	PARTS – CODE
<CONNECTORS>			
CN205	H1F3BA-34PA-2.54DS	HIR	30164-05700
CN801	DF1-11P-2.5DSA	HIR	30079-01100
CN904	TRC16R10F1	TAJ	30422-00300
CN906	P-2171A	EMD	31010-00201
CN907	P-2171A	EMD	31010-00201
CN908	P-2171A	EMD	31010-00201
CN909	P-2171A	EMD	31010-00201
CN910	P-2171A	EMD	31010-00201
CN911	P-2171A	EMD	31010-00201
CN912	P-2171A	EMD	31010-00201
CN913	P-2171A	EMD	31010-00201
CN914	P-2171A	EMD	31010-00201
CN915	P-2171A	EMD	31010-00201
CN916	P-2171A	EMD	31010-00201
CN917	P-2171A	EMD	31010-00201
CN918	P-2171A	EMD	31010-00201
CN919	P-2171A	EMD	31010-00201

20/30SERIES
FRONT LEFT BOARD

No.	DESCRIPTION	MFD.	PARTS – CODE
<INTEGRATED CIRCUIT>			
IC2	NJM78L05A	JRC	01392-00301
<TRANSISTOR>			
Tr1	2SC1815Y-TPE2	TOS	02824-05702
<DIODES>			
D1	TLR226	TOS	03575-01000
D2	TLR226	TOS	03575-01000
D3	TLG226	TOS	03572-00330
D4	LT9230D (only 14")	SRP	03336-00130
<RESISTORS>			
R1	ERDS1VJ 221T	MAT	12106-22133
R2	ERDS2TJ 152T	MAT	12108-15213
R3	ERDS2TJ 152T	MAT	12108-15213
R4	ERDS2TJ 152T	MAT	12108-15213
R5	ERDS2TJ 471T	MAT	12108-47113
<CAPACITORS>			
C1	ECQ-V1H 104JZ2	MAT	22137-10450
C2	ECQ-V1H 104JZ2	MAT	22137-10450
<SWITCHES>			
S1	DPL4-200	FJS	36001-03000
	MD8050103	FJS	36001-01302
	MD0340162	FJS	36001-00016
S2	DP4-200	FJS	36001-02900
	MD8050109	FJS	36001-02901
	MD0340162	FJS	36001-00016
<CONNECTORS>			
CN922	00-9021-0212-00-339 (only 20")	ELC	30508-00190
CN935	DF1-10P-2.5DSA	HIR	30079-01000

20/30SERIES
FRONT PANEL BOARD

No.	DESCRIPTION	MFD.	PARTS – CODE
<DIODES>			
D1	TLG226	TOS	03572-00330
D2	TLG226	TOS	03572-00330
D3	TLG226	TOS	03572-00330
D4	TLG226	TOS	03572-00330
D5	TLG226	TOS	03572-00330
D6	TLG226	TOS	03572-00330
D7	TLG226	TOS	03572-00330
D8	TLG226	TOS	03572-00330
D9	TLG226	TOS	03572-00330
D10	TLG226	TOS	03572-00330
D11	TLG226	TOS	03572-00330
D12	TLG226	TOS	03572-00330
D13	TLG226	TOS	03572-00330
D14	TLG226	TOS	03572-00330
D15	TLG226	TOS	03572-00330
D16	TLY226	TOS	03576-01000
D17	TLY226	TOS	03576-01000
D18	TLY226	TOS	03576-01000
D19	TLY226	TOS	03576-01000
D20	TLG226	TOS	03572-00330
D21	TLG226	TOS	03572-00330
D22	TLG226	TOS	03572-00330
<RESISTOR>			
R1	ERDS2TJ 821	MAT	
<SWITCHES>			
S9	SKHHAK	ALP	34267-01009
S10	SKHHAK	ALP	34267-01009
S11	SKHHAK	ALP	34267-01009
S12	SKHHAK	ALP	34267-01009
S17	SKHHAK	ALP	34267-01009
S18	SKHHAK	ALP	34267-01009
S19	SKHHAK	ALP	34267-01009
S20	SKHHAK	ALP	34267-01009
S25	SKHHAK	ALP	34267-01009
S26	SKHHAK	ALP	34267-01009
S27	SKHHAK	ALP	34267-01009
S28	SKHHAK	ALP	34267-01009
S33	SKHHAK	ALP	34267-01009
S34	SKHHAK	ALP	34267-01009
S35	SKHHAK	ALP	34267-01009
S36	SKHHAK	ALP	34267-01009
<CONNECTOR>			
CN223	H1F3FC-34PA-2.54DSA	HIR	30164-18340

• 20/30SERIES •
• CONTROL BOARD •

<INTEGRATED CIRCUITS>

No.	DESCRIPTION	MFD.	PARTS – CODE
IC1	AN90B10	MAT	01004-09010
IC2	TC74HC 148AP	TOS	01572-10420
IC3	TC74HC 148AP	TOS	01572-10420
IC4	TC74HC 365AP	TOS	01572-10970
IC5	TC74HC 138AP	TOS	01572-10380
IC6	TC74HC 244AP	TOS	01572-10760
IC7	TC74HC 365AP	TOS	01572-10970
IC8	NJM78L08A	JRC	01392-00303
IC9	TC74HC 374AP	TOS	01572-11020
IC10	TC74HC 374AP	TOS	01572-11020
IC11	TC74HC 374AP	TOS	01572-11020
IC12	TC74HC 374AP	TOS	01572-11020
IC13	TC74HC 374AP	TOS	01572-11020
IC14	TC74HC 374AP	TOS	01572-11020

<DIODES>

No.	DESCRIPTION	MFD.	PARTS – CODE
D1	1S1588	TOS	03812-01200
D2	1S1588	TOS	03812-01200
D3	1S1588	TOS	03812-01200
D4	1S1588	TOS	03812-01200
D5	1S1588	TOS	03812-01200
D6	1S1588	TOS	03812-01200
D7	1S1588	TOS	03812-01200
D8	1S1588	TOS	03812-01200
D9	1S1588	TOS	03812-01200
D10	1S1588	TOS	03812-01200
D11	1S1588	TOS	03812-01200
D12	1S1588	TOS	03812-01200
D13	1S1588	TOS	03812-01200
D14	1S1588	TOS	03812-01200
D15	1S1588	TOS	03812-01200
D16	1S1588	TOS	03812-01200
D17	1S1588	TOS	03812-01200
D18	1S1588	TOS	03812-01200
D19	1S1588	TOS	03812-01200
D20	1S1588	TOS	03812-01200
D21	1S1588	TOS	03812-01200
D22	1S1588	TOS	03812-01200
D23	1S1588	TOS	03812-01200
D24	1S1588	TOS	03812-01200
D25	1S1588	TOS	03812-01200
D26	1S1588	TOS	03812-01200
D27	1S1588	TOS	03812-01200

<VARIABLE RESISTOR>

No.	DESCRIPTION	MFD.	PARTS – CODE
VR1	GF06UT2 2KΩ	COS	15194-20200

<RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
R1	ERDS2TJ 101 T	MAT	12108-10113
R2	ERDS2TJ 101 T	MAT	12108-10113
R3	ERDS2TJ 101 T	MAT	12108-10113
R4	ERDS2TJ 101 T	MAT	12108-10113
R5	ERDS2TJ 101 T	MAT	12108-10113
R6	ERDS2TJ 101 T	MAT	12108-10113
R7	ERDS2TJ 101 T	MAT	12108-10113
R8	ERDS2TJ 101 T	MAT	12108-10113
R9	ERDS2TJ 101 T	MAT	12108-10113
R10	ERDS2TJ 101 T	MAT	12108-10113
R11	ERDS2TJ 101 T	MAT	12108-10113
R12	ERDS2TJ 101 T	MAT	12108-10113
R13	ERDS2TJ 101 T	MAT	12108-10113
R14	ERDS2TJ 101 T	MAT	12108-10113
R15	ERDS2TJ 821 T	MAT	12108-82113
R16	ERDS2TJ 821 T	MAT	12108-82113
R17	ERDS2TJ 821 T	MAT	12108-82113
R18	ERDS2TJ 821 T	MAT	12108-82113
R19	ERDS2TJ 821 T	MAT	12108-82113
R20	ERDS2TJ 821 T	MAT	12108-82113
R21	ERDS2TJ 821 T	MAT	12108-82113
R22	ERDS2TJ 821 T	MAT	12108-82113
R23	ERDS2TJ 821 T	MAT	12108-82113
R24	ERDS2TJ 821 T	MAT	12108-82113
R25	ERDS2TJ 821 T	MAT	12108-82113
R26	ERDS2TJ 821 T	MAT	12108-82113
R27	ERDS2TJ 821 T	MAT	12108-82113
R28	ERDS2TJ 821 T	MAT	12108-82113
R29	ERDS2TJ 821 T	MAT	12108-82113
R30	ERDS2TJ 821 T	MAT	12108-82113
R31	ERDS2TJ 821 T	MAT	12108-82113
R32	ERDS2TJ 821 T	MAT	12108-82113
R33	ERDS2TJ 821 T	MAT	12108-82113
R34	ERDS2TJ 821 T	MAT	12108-82113
R35	ERDS2TJ 821 T	MAT	12108-82113
R36	ERDS2TJ 821 T	MAT	12108-82113
R37	ERDS2TJ 473 T	MAT	12108-47313
R38	ERDS2TJ 473 T	MAT	12108-47313
R39	ERDS2TJ 822 T	MAT	12108-82213

<NETWORK RESISTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
RP1	M9-1-223J	BEC	19032-91223
RP2	M9-1-104J	BEC	19032-91104
RP3	M9-1-472J	BEC	19032-91472
RP4	M9-1-103J	BEC	19032-91103
RP5	M6-1-103J	BEC	19032-61103
RP6	M9-1-104J	BEC	19032-91104
RP7	M5-1-104J	BEC	19032-51104
RP8	M9-1-152J	BEC	19032-91152
RP9	M9-1-152J	BEC	19032-91152
RP10	M6-1-152J	BEC	19032-61152

<CAPACITORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
C1	ECEA 1CKA 101	MAT	20138-10716
C2	ECQ-V1H 104 JZ2	MAT	22137-10450
C3	ECEA 1CKA 101	MAT	20138-10716
C4	ECQ-V1H 104 JZ2	MAT	22137-10450
C5	ECEA 1CKA 101	MAT	20138-10716
C6	ECEA 1CKA 470	MAT	20138-47616
C7	ECQ-V1H 104 JZ2	MAT	22137-10450
C8	ECQ-V1H 104 JZ2	MAT	22137-10450
C9	ECEA 1CKA 470	MAT	20138-47616
C10	ECEA 1HKG 010	MAT	20136-10550
C11	FK11 Y5R1H104M-TP	TDK	24164-10450
C12	FK11 Y5R1H104M-TP	TDK	24164-10450
C13	FK11 Y5R1H104M-TP	TDK	24164-10450
C14	FK11 Y5R1H104M-TP	TDK	24164-10450
C15	FK11 Y5R1H104M-TP	TDK	24164-10450
C16	FK11 Y5R1H104M-TP	TDK	24164-10450
C17	FK11 Y5R1H104M-TP	TDK	24164-10450
C18	FK11 Y5R1H104M-TP	TDK	24164-10450
C19	FK11 Y5R1H104M-TP	TDK	24164-10450
C20	FK11 Y5R1H104M-TP	TDK	24164-10450
C21	FK11 Y5R1H104M-TP	TDK	24164-10450
C22	FK11 Y5R1H104M-TP	TDK	24164-10450

<COIL>

No.	DESCRIPTION	MFD.	PARTS – CODE
L1	TSL0707-101KR66	TDK	40586-00103

<SWITCHES>

No.	DESCRIPTION	MFD.	PARTS – CODE
S5	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S6	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S7	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S8	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S13	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S14	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S15	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S16	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S21	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S22	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S23	TM2-21-L2	FJS	34061-00200
	TZ0106	FJS	34061-00043
S24	TM2-21-L2	FJS	34061-00200
	TZ0106	FJS	34061-00043
S29	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S30	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S31	TM2-21-L2	FJS	34061-00200
	TZ0105	FJS	34061-00042
S32	TM2-21-L2	FJS	34061-00200
	TZ0105	FJS	34061-00042
S37	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S38	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S39	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S40	TM2-21-L2	FJS	34061-00200
	TZ0102	FJS	34061-00041
S41	TM1-01	FJS	34061-00100
	TZ0011	FJS	34061-00006
S42	TM2-21-L5	FJS	34061-00205
	TZ0111	FJS	34061-00031
S43	TM1-01	FJS	34061-00100
	TZ0011	FJS	34061-00006
S44	TM1-01	FJS	34061-00100
	TZ0011	FJS	34061-00006
S45	TM2-21-L2	FJS	34061-00200
	TZ0111	FJS	34061-00031
S46	TM2-21-L5	FJS	34061-00205
	TZ0111	FJS	34061-00031
S47	TM2-21-L5	FJS	34061-00205
	TZ0111	FJS	34061-00031
S48	TM2-21-L5	FJS	34061-00205
	TZ0111	FJS	34061-00031
S49	TM1-01	FJS	34061-00100
	TZ0011	FJS	34061-00006
S50	TM1-01	FJS	34061-00100
	TZ0011	FJS	34061-00006
S51	TM1-01	FJS	34061-00100
	TZ0011	FJS	34061-00006
S52	TM1-01	FJS	34061-00100
	TZ0011	FJS	34061-00006
S53	TM1-01	FJS	34061-00100
	TZ0011	FJS	34061-00006
S54	DRS3010	FJS	36001-01301
S55	DRS3010	FJS	36001-01301

<CONNECTORS>

No.	DESCRIPTION	MFD.	PARTS – CODE
CN219	H1F3BA-40PA-2.54DS	HIR	30164-05800
CN220	A3-10PA-2DS	HIR	30003-00400
CN905	RP17-13RA-12SD	HIR	30377-17350

<OTHER>

No.	DESCRIPTION	MFD.	PARTS – CODE
RE1	ST-901676	ALP	15995-16760

• 20/30SERIES •
• VR BOARD •

<VARIABLE RESISTORS>

NO.	DESCRIPTION	MFD.	PARTS-CODE
VR1	ST-902361	IKE	15995-23610
VR2	ST-902361	IKE	15995-23610
VR3	ST-902361	IKE	15995-23610
VR4	ST-902361	IKE	15995-23610

<CONNECTOR>

NO.	DESCRIPTION	MFD.	PARTS-CODE
CN222	A3-10PA-2DS	HIR	30003-00400

6-3 MECHANICAL PARTS LIST AND EXPLODED VIEW

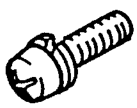
1 なべ小ねじ
NM  PAN HEAD SCREW
BNM PAN HEAD SCREW (BLACK)

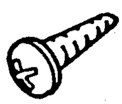
2 さら小ねじ
SM  FLAT HEAD SCREW
BSM FLAT HEAD SCREW (BLACK)

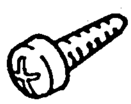
3 丸さら小ねじ
MM  OVAL COUNTERSUNK HEAD SCREW
BMM OVAL COUNTERSUNK HEAD SCREW (BLACK)

4 トラスねじ
TM  TRUSS HEAD SCREW
BTM TRUSS HEAD SCREW (BLACK)

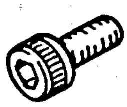
5 バインドねじ
NMB  BINDING HEAD SCREW

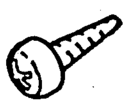
8 セムスねじ
NMS  PAN HEAD SCREW AND WASHER ASS'Y

9 トラスタッピングねじ
TH–TS  TRUSS HEAD TAPPING SCREW

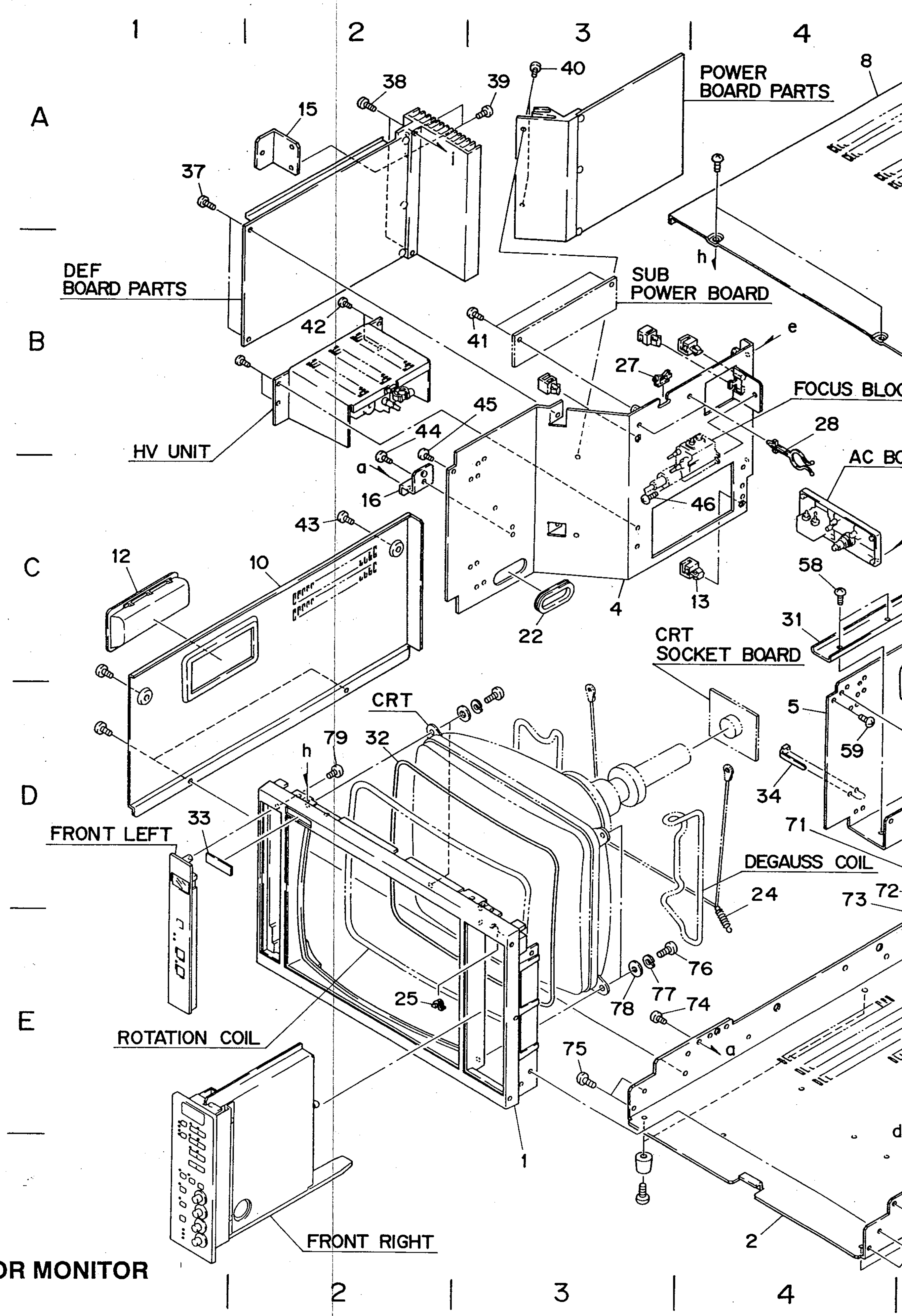
10 バインドタッピングねじ
NMB–TS  BINDING HEAD TAPPING SCREWS

11 ホロセット
HM  HEXAGON SOCKET SET SCREW

12 ソケットヘッドキャップスクリュー
SHM  HEXAGON SOCKET HEAD CAP SCREW

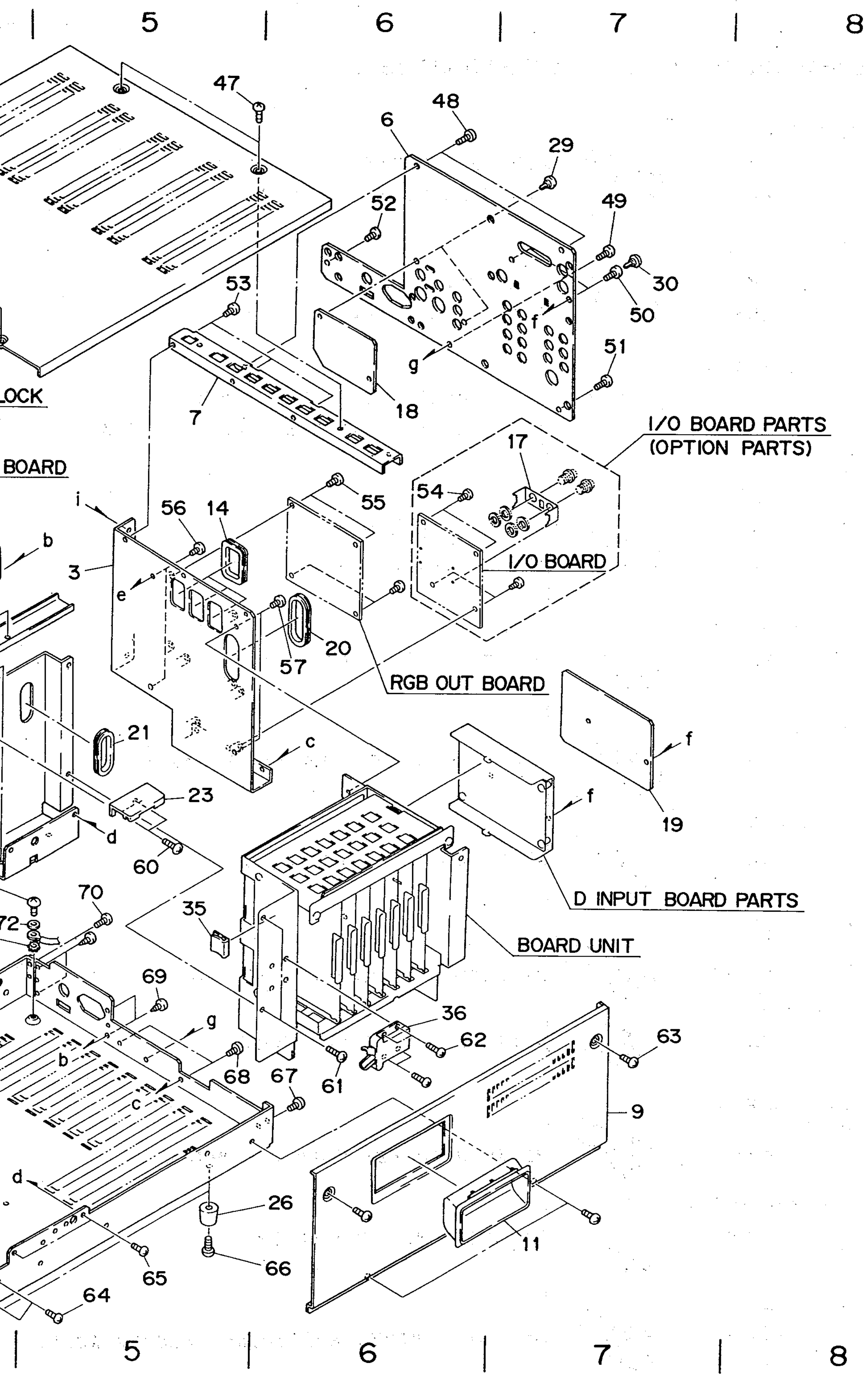
13 なべタッピングねじ
NM–TS  PAN HEAD TAPPING SCREWS

14 セムスねじ
NMXW  PAN HEAD SCREW AND DOUBLE WASHER ASS'Y



14″ COLOR MONITOR BODY

K3-950094



5
6
7
8
A
B
C
D
E
F
47
48
6
29
52
49
30
50
53
f
g
51
18
7
LOCK
I/O BOARD PARTS
(OPTION PARTS)
17
BOARD
54
55
i
56
14
b
3
e
I/O BOARD
20
57
RGB OUT BOARD
21
c
f
23
f
d
19
60
D INPUT BOARD PARTS
70
35
72
BOARD UNIT
69
36
g
62
63
b
68
67
61
c
9
d
26
11
65
66
64

NO.	INDEX	COMPONENTS	PARTS NO.	Q'ty
46	4-C	SCREW	NMB 3-8	1
47	5-A	SCREW	NMB 4-6	4
48	6-A	SCREW	NMB 3-6	2
49	7-A	SCREW	NMB 3-6	1
50	7-B	SCREW	NMB 3-6	2
51	7-B	SCREW	NMB 3-6	1
52	6-A	SCREW	NMB 3-6	1
53	5-B	SCREW	NMB 3-6	2
54	6-C	SCREW	NMB 3-6	4
55	6-C	SCREW	NMB 3-6	4
56	5-C	SCREW	NMB 3-6	2
57	6-C	SCREW	NMB 3-6	2
58	4-C	SCREW	NMB 4-8	2
59	4-D	SCREW	NMB 4-8	1
60	5-D	SCREW	NMB 3-6	2
61	6-E	SCREW	NMB 3-6	2
62	6-E	SCREW	NMB 3-8	4
63	7-E	SCREW	NMB 4-6	4
64	5-F	SCREW	NMB 4-8	2
65	5-F	SCREW	NMB 3-6	2
66	5-F	SCREW	NMB 4-14	4
67	6-E	SCREW	NMB 3-6	1
68	5-E	SCREW	NMB 3-6	2
69	5-E	TAPPING SCREW	NMB-TS 3-10	4
70	5-D	SCREW	NMB 3-6	1
71	4-D	SCREW	NMB 4-8	1
72	4-D	PLANE WASHER	HW 4	1
73	4-D	TOOTHED LOCK WASHER	TW 4	1
74	4-E	SCREW	NMB 3-6	1
75	3-E	SCREW	NMB 4-8	2
76	4-E	SCREW	NMB 6-16	4
77	3-E	SPRING LOCK WASHER	SW 6	4
78	3-E	PLANE WASHER	HW 6	4
79	2-D	SCREW	NMB 3-10	1

NO.	INDEX	COMPON
1	3-F	ESCUTC
2	4-F	CHASSI
3	5-C	REAR C
4	3-C	LEFT F
5	4-D	RIGHT
6	6-A	REAR P
7	5-B	REAR C
8	4-A	TOP CO
9	7-E	SIDE C
10	2-C	SIDE C
11	7-F	HANDLE
12	1-C	HANDLE
13	4-C	PCB HO
14	5-C	BUSHIN
15	2-A	COVER
16	2-C	LEFT M
17	7-B	CONNEC
18	6-B	BLANK
19	7-D	BLANK
20	6-C	BUSHIN
21	5-D	BUSHIN
22	3-C	BUSHIN
23	5-D	GUIDE(
24	4-D	EARTH
25	2-E	RAIL G
26	6-F	MONITO
27	3-B	EDGING
28	4-B	CABLE
29	7-A	PUSH R
30	7-B	PUSH R
31	4-C	SLIDES
32	2-D	ESCUTC
33	1-D	NAME P
34	4-D	CABLE
35	5-D	CABLE
36	6-E	TOUCH
37	1-A	SCREW
38	2-A	SCREW
39	3-A	SCREW
40	3-A	SCREW
41	3-B	SCREW
42	2-B	SCREW
43	2-C	SCREW
44	2-B	SCREW
45	3-B	SCREW

14″ COLOR MONITOR
BODY

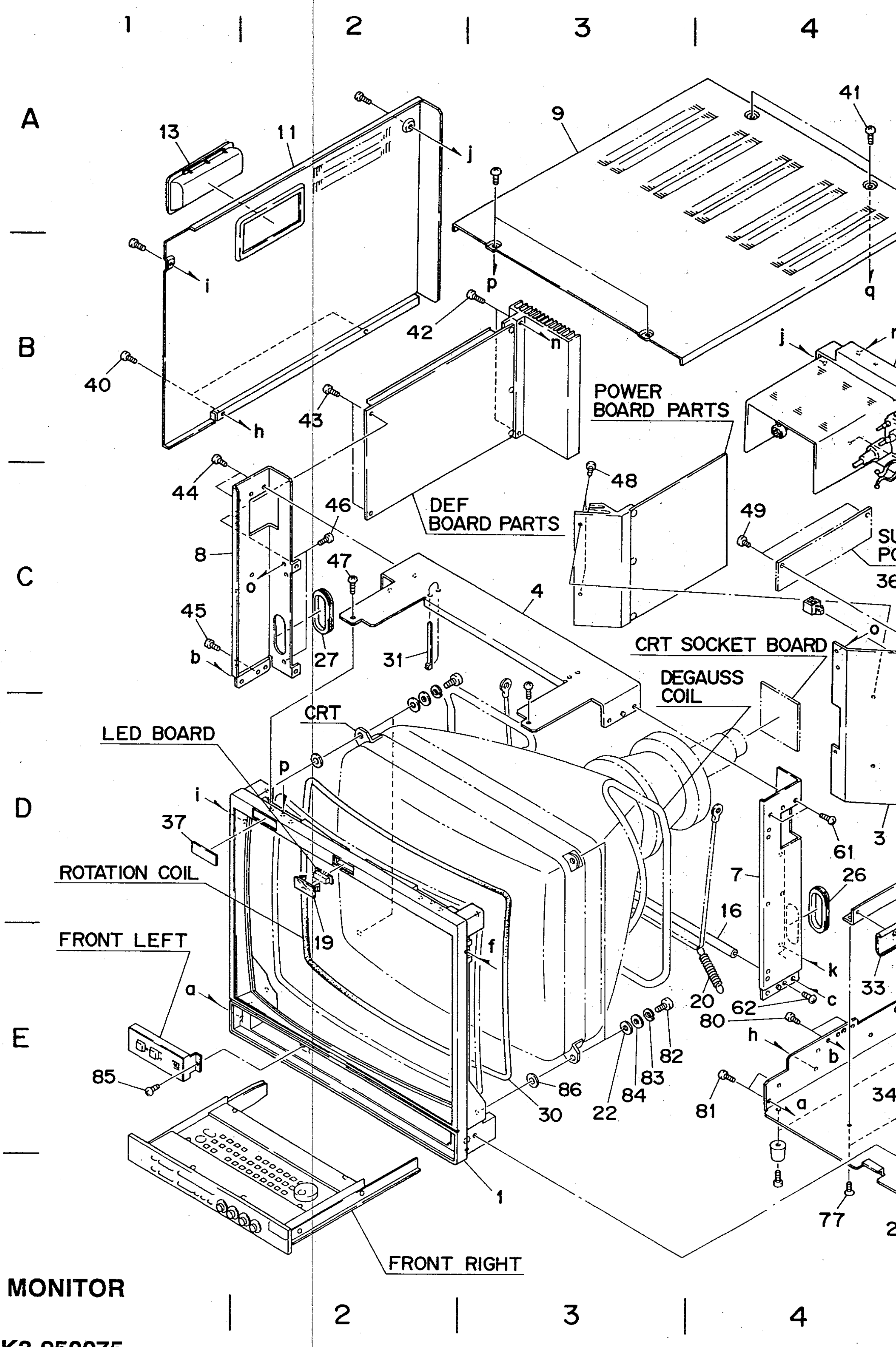
K3-950094

Q' ty
1
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1

NO.	INDEX	COMPONENTS	PARTS NO.	Q' ty
1	3-F	ESCUTCHEON	M0-950139	1
2	4-F	CHASSIS	M0-920392	1
3	5-C	REAR CHASSIS (1)	M1-920397	1
4	3-C	LEFT FRAME	M1-920596	1
5	4-D	RIGHT FRAME (2)	M1-920597	1
6	6-A	REAR PANEL	M1-950350	1
7	5-B	REAR CHASSIS (2)	M2-950234	1
8	4-A	TOP COVER	M2-920401	1
9	7-E	SIDE COVER	M2-920549-A	1
10	2-C	SIDE COVER	M2-920549-B	1
11	7-F	HANDLE	M2-911020	1
12	1-C	HANDLE	M2-911020	1
13	4-C	PCB HOLDER	M3-908268	4
14	5-C	BUSHING B.TYPE	M3-916296	3
15	2-A	COVER METAL	M4-920599	1
16	2-C	LEFT METAL	M4-920600	1
17	7-B	CONNECTOR METAL	M4-915728	1
18	6-B	BLANK PANEL (2)	M4-950368	1
19	7-D	BLANK PANEL (1)	M4-950369	1
20	6-C	BUSHING (2)	M4-916295	1
21	5-D	BUSHING (2)	M4-916295	1
22	3-C	BUSHING (2)	M4-916295	1
23	5-D	GUIDE (1)	M4-912830	1
24	4-D	EARTH SPRING	M4-279433A	4
25	2-E	RAIL GUIDE	M4-914254	1
26	6-F	MONITOR FOOT	M4-908267	4
27	3-B	EDGING SADDLE	EDS-3	1
28	4-B	CABLE CLIP D	1F55	2
29	7-A	PUSH RIVET	P3545	2
30	7-B	PUSH RIVET	P3545	2
31	4-C	SLIDES RAIL (OUTER)	C-203-413	1
32	2-D	ESCUTCHEON PACKING	KG-CR5754	1
33	1-D	NAME PLATE	D45	1
34	4-D	CABLE TIES	SG-100	1
35	5-D	CABLE CLAMP	3484-1000	1
36	6-E	TOUCH LATCH (CATCHER)	TTL-00562	1
37	1-A	SCREW	NMB 3-6	2
38	2-A	SCREW	NMB 4-16	2
39	3-A	SCREW	NMB 3-6	2
40	3-A	SCREW	NMB 4-10	2
41	3-B	SCREW	NMB 3-6	2
42	2-B	SCREW	NMB 3-6	4
43	2-C	SCREW	NMB 4-6	4
44	2-B	SCREW	NMB 3-6	1
45	3-B	SCREW	NMB 4-8	1

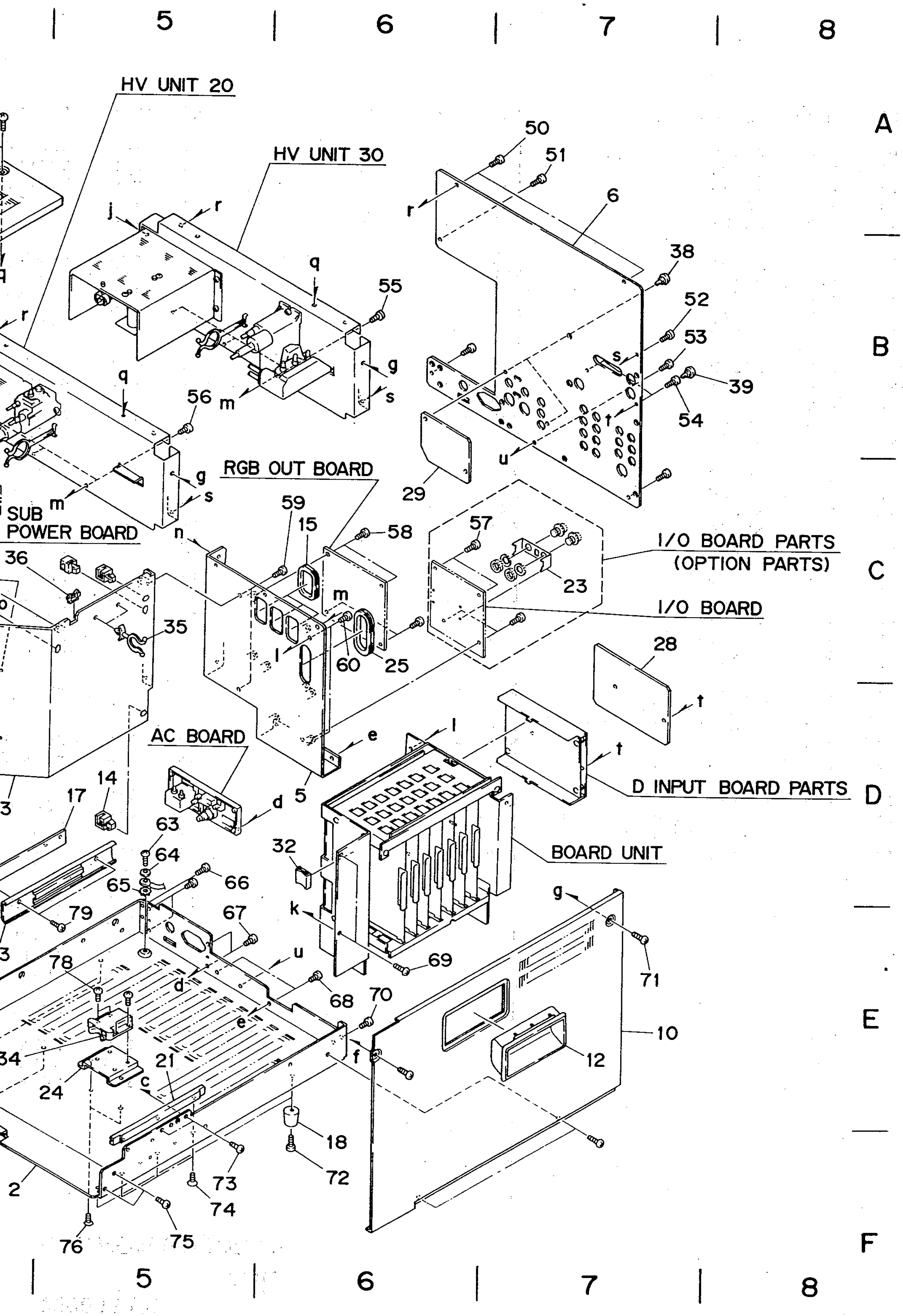
14″ COLOR MONITOR
BODY

K3-950094



20″ COLOR MONITOR BODY

K3-950075


HV UNIT 20
HV UNIT 30
SUB POWER BOARD
RGB OUT BOARD
AC BOARD
I/O BOARD PARTS
(OPTION PARTS)
I/O BOARD
D INPUT BOARD PARTS
BOARD UNIT

NO.	INDEX	COMPONENTS	PARTS NO.	Q'ty
46	2-C	SCREW	NMB 3-6	2
47	2-C	SCREW	SM 4-4	2
48	3-C	SCREW	NMB 4-10	2
49	4-C	SCREW	NMB 3-6	2
50	7-A	SCREW	NMB 3-6	2
51	7-A	SCREW	NMB 3-6	1
52	7-B	SCREW	NMB 3-6	1
53	7-B	SCREW	NMB 3-6	3
54	7-B	SCREW	NMB 3-6	2
55	6-B	SCREW	NMB 3-6	3
56	5-B	SCREW	NMB 3-6	3
57	6-C	SCREW	NMB 3-6	4
58	6-C	SCREW	NMB 3-6	4
59	6-C	SCREW	NMB 3-6	2
60	6-C	SCREW	NMB 3-6	2
61	4-D	SCREW	NMB 3-6	2
62	4-E	SCREW	NMB 3-6	1
63	5-D	SCREW	NMB 4-8	1
64	5-D	PLANE WASHER	HW 4	1
65	5-D	TOOTHED LOCK WASHER	TW 4	1
66	5-D	SCREW	NMB 3-6	1
67	5-E	TAPPING SCREW	NMB-TS 3-10	4
68	6-E	SCREW	NMB 3-6	2
69	6-E	SCREW	NMB 3-6	2
70	6-E	SCREW	NMB 3-6	1
71	7-E	SCREW	NMB 4-6	4
72	6-F	SCREW	NMB 4-14	4
73	5-F	SCREW	NMB 3-6	2
74	5-F	TAPPING SCREW	ST 2.6-6	3
75	5-F	SCREW	NMB 4-8	2
76	5-F	SCREW	SM 2.6-6	2
77	4-F	SCREW	SM 2.6-6	2
78	4-E	SCREW	NMB 3-8	4
79	5-E	SCREW	NMB 4-6	2
80	4-E	SCREW	NMB 3-6	2
81	4-E	SCREW	NMB 4-8	2
82	3-E	SCREW	NM 6-16	4
83	3-E	SPRING LOCK WASHERS	SW 6	4
84	3-E	PLANE WASHERS	HW 6	4
85	1-E	SCREW	NMB 2-4	1
86	3-E	PLANE WASHERES	HW 6 t=0.8	4

NO.	INDEX	COMPONE
1	3-F	ESCUTCH
2	4-F	CHASSIS
3	4-D	LEFT FR
4	3-C	CENTER
5	6-D	REAR CH
6	7-A	REAR PA
7	4-D	RIGHT F
8	1-C	LEFT FR
9	3-A	TOP COV
10	7-E	SIDE CO
11	2-A	SIDE CO
12	7-E	HANDLE
13	1-A	HANDLE
14	5-D	PCB HOL
15	6-C	BUSHING
16	4-D	SHAFT
17	5-D	LEFT RA
18	6-F	MONITOR
19	2-E	TALLY
20	4-E	EARTH S
21	5-E	GUIDE R
22	3-E	CRT WAS
23	7-C	CONNECT
24	5-E	TOUCH L
25	6-C	BUSHING
26	4-D	BUSHING
27	2-C	BUSHING
28	7-C	BLANK P
29	6-C	BLANK P
30	3-E	ESCUTCH
31	2-C	CABLE T
32	6-D	CABLE C
33	4-E	SLIDES
34	4-E	TOUCH L
35	5-C	CABLE C
36	4-C	EDGING
37	1-D	NAME PL
38	7-B	PUSH RI
39	8-B	PUSH RI
40	1-B	SCREW
41	4-A	SCREW
42	2-B	SCREW
43	2-B	SCREW
44	1-C	SCREW
45	1-C	SCREW

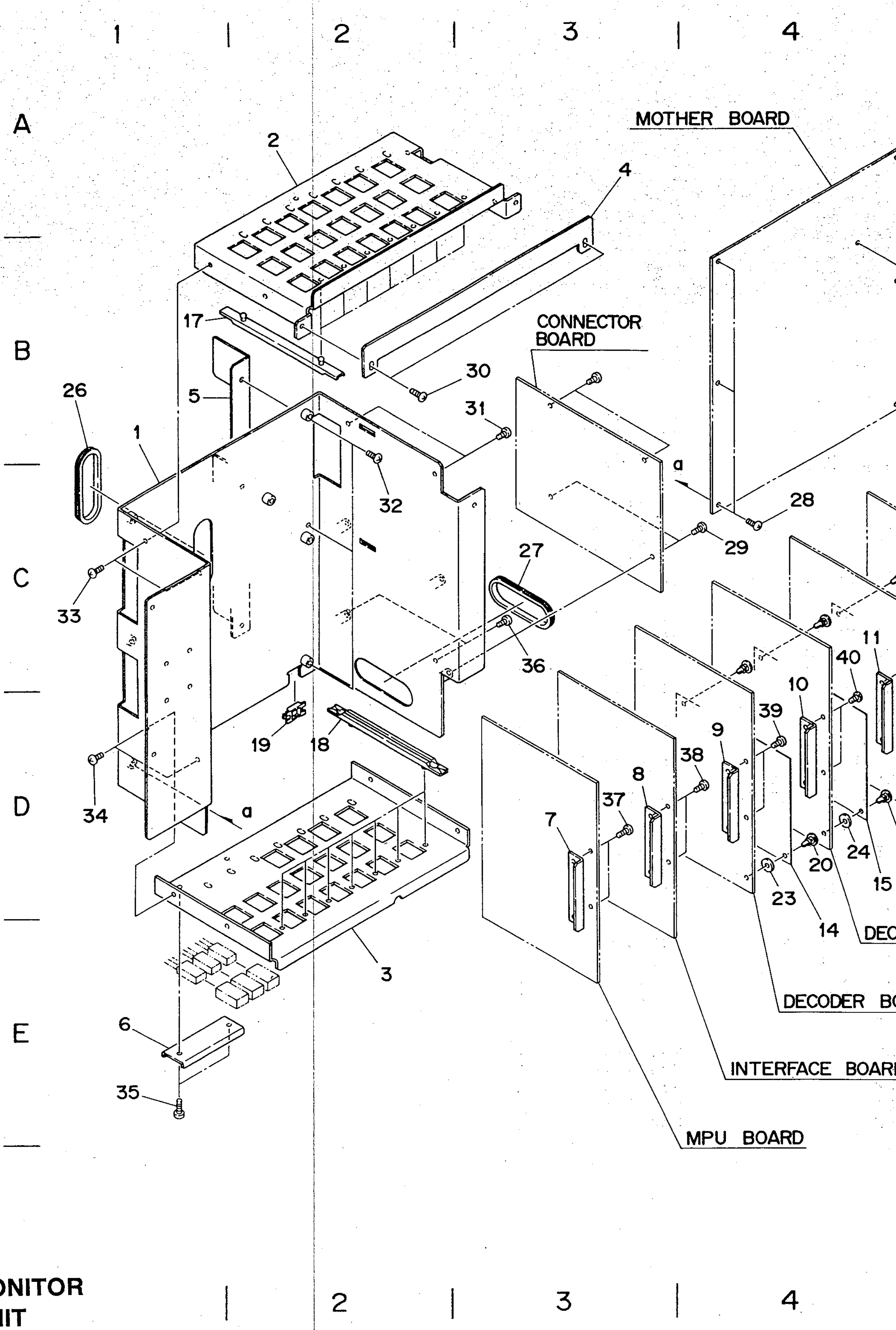
20″ COLOR MONITOR BODY

K3-950075

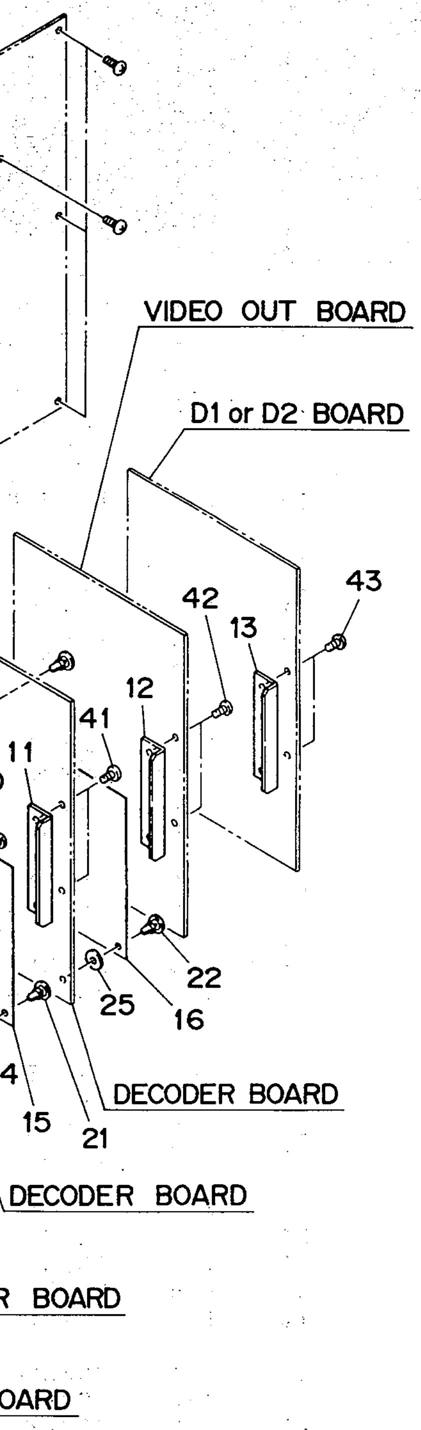
NO.	INDEX	COMPONENTS	PARTS NO.	Q'ty
1	3-F	ESCUTCHEON	M0-950063	1
2	4-F	CHASSIS	M0-920392	1
3	4-D	LEFT FRAME (2)	M1-950169	1
4	3-C	CENTER FRAME	M1-950211	1
5	6-D	REAR CHASSIS	M1-920397	1
6	7-A	REAR PANEL	M1-950364	1
7	4-D	RIGHT FRAME (1)	M2-920393	1
8	1-C	LEFT FRAME (1)	M2-920394	1
9	3-A	TOP COVER	M2-920401	1
10	7-E	SIDE COVER	M2-920400-A	1
11	2-A	SIDE COVER	M2-920400-B	1
12	7-E	HANDLE	M2-911020	1
13	1-A	HANDLE	M2-911020	1
14	5-D	PCB HOLDER	M3-908268	4
15	6-C	BUSHING B.TYPE	M3-916296	3
16	4-D	SHAFT	M4-919638	1
17	5-D	LEFT RAIL METAL	M4-920521	1
18	6-F	MONITOR FOOT	M4-908267	4
19	2-E	TALLY	M4-912378	1
20	4-E	EARTH SPRING	M4-279433A	2
21	5-E	GUIDE RAIL	M4-908515	1
22	3-E	CRT WASHERES	M4-281236A	4
23	7-C	CONNECTOR METAL	M4-915728	1
24	5-E	TOUCH LATCH METAL	M4-920403	1
25	6-C	BUSHING (2)	M4-916295	1
26	4-D	BUSHING (2)	M4-916295	1
27	2-C	BUSHING (2)	M4-916295	1
28	7-C	BLANK PANEL (1)	M4-950369	1
29	6-C	BLANK PANEL (2)	M4-950368	1
30	3-E	ESCUTCHEON PACKING	KG-CR5890	1
31	2-C	CABLE TIES	SG-100	1
32	6-D	CABLE CLAMP	3484-1000	1
33	4-E	SLIDES RAIL (OUTER)	C-203-413	1
34	4-E	TOUCH LATCH (CATCHER)	TTL-00562	1
35	5-C	CABLE CLIP D	1F55	2
36	4-C	EDGING SADDLE	EDS-3	1
37	1-D	NAME PLATE	D45	1
38	7-B	PUSH RIVET	P3545	2
39	8-B	PUSH RIVET	P3545	2
40	1-B	SCREW	NMB 4-6	4
41	4-A	SCREW	NMB 4-6	4
42	2-B	SCREW	NMB 4-16	2
43	2-B	SCREW	NMB 3-6	2
44	1-C	SCREW	NMB 3-6	2
45	1-C	SCREW	NMB 3-6	1

20″ COLOR MONITOR
BODY

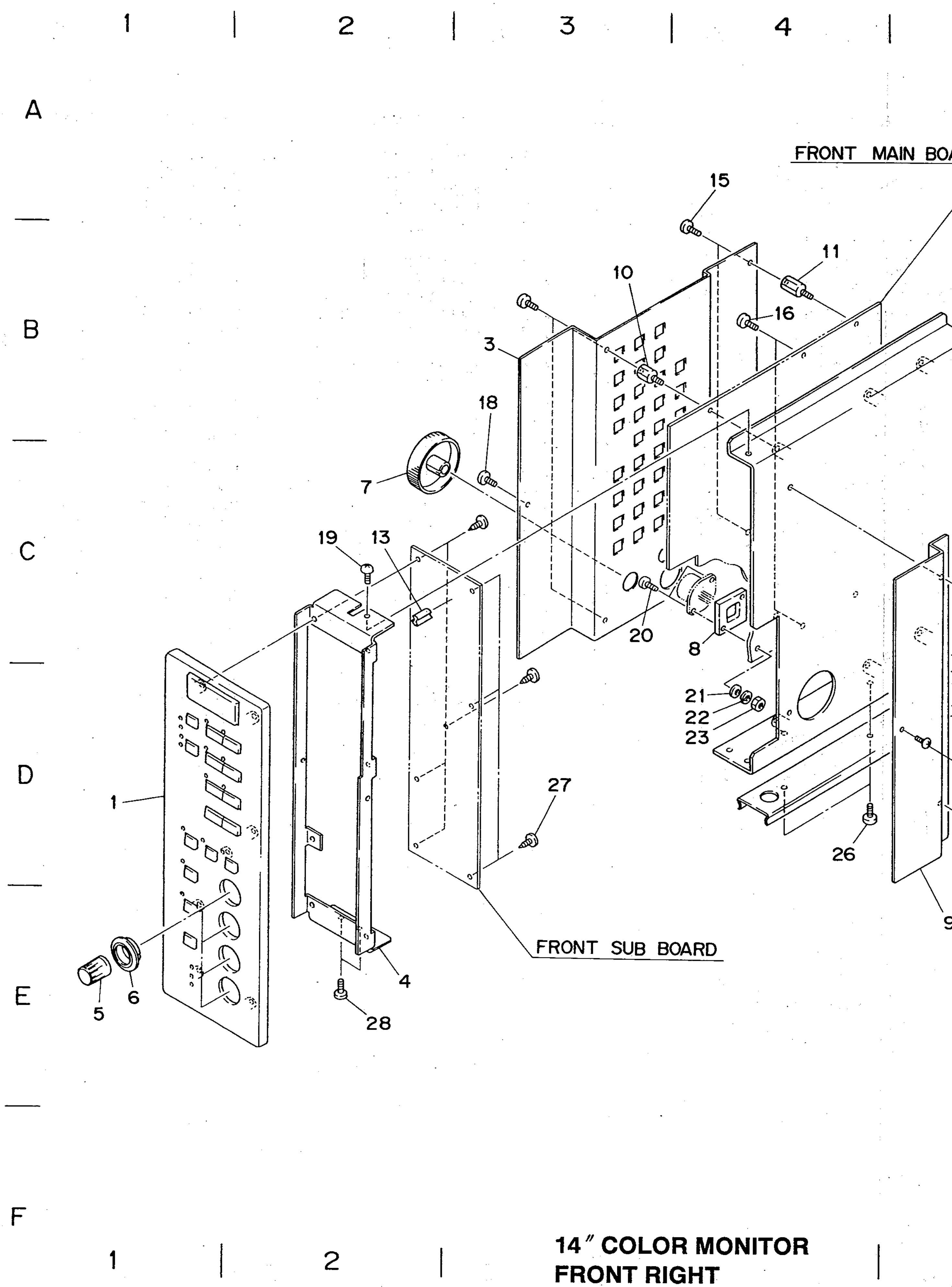
K3-950075



COLOR MONITOR
BOARD UNIT
K3-950077

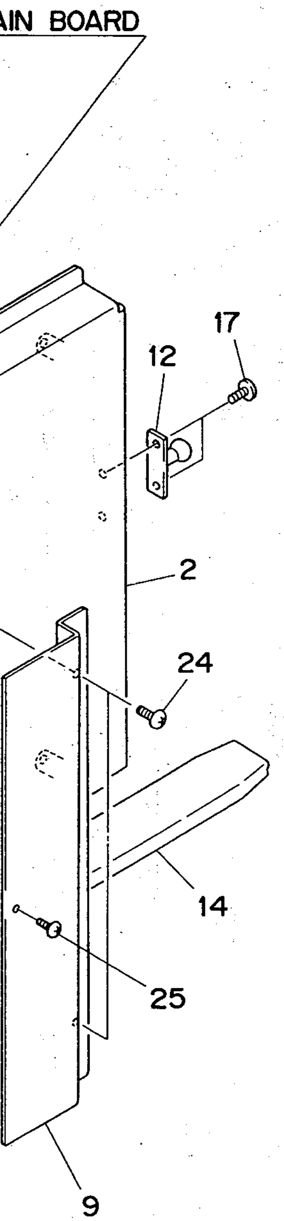


NO.	INDEX	COMPONENTS	PARTS NO.	Q'ty
1	1-B	RIGHT FRAME	M1-920406	1
2	2-A	RAIL CHASSIS (1)	M2-920407	1
3	2-E	RAIL CHASSIS (2)	M2-950165	1
4	3-A	BOARD STOPPER	M3-950143	1
5	1-B	RIGHT METAL	M3-920402	1
6	1-E	Tr FIXING METAL	M4-909466	1
7	3-D	BOARD METAL	M4-920363-A	1
8	3-D	BOARD METAL	M4-920363-B	1
9	4-D	BOARD METAL	M4-920363-C	1
10	4-C	BOARD METAL	M4-920363-C	1
11	4-C	BOARD METAL	M4-920363-C	1
12	5-C	BOARD METAL	M4-920363-D	1
13	5-C	BOARD METAL	M4-920363-E	1
14	4-E	SHIELD PANEL	M4-950237	1
15	4-D	SHIELD PANEL	M4-950237	1
16	5-D	SHIELD PANEL	M4-950237	1
17	1-B	GUIDE RAIL	GR-120S	7
18	2-D	GUIDE RAIL	GR-120S	7
19	2-D	EDGING SADDLE	EDS-3	1
20	4-D	PUSH RIVET	P4070B	2
21	5-D	PUSH RIVET	P4070B	2
22	5-D	PUSH RIVET	P4070B	2
23	4-D	SPACER	C403	2
24	4-D	SPACER	C403	2
25	5-D	SPACER	C403	2
26	1-B	BUSHING (2)	M4-916295	1
27	3-C	BUSHING (2)	M4-916295	1
28	4-C	SCREW	NMB 3-6	7
29	4-C	SCREW	NMB 3-6	4
30	3-B	SCREW	NMB 3-6	2
31	3-B	SCREW	NMB 3-6	2
32	2-C	SCREW	NMB 3-6	2
33	1-C	SCREW	NMB 3-6	2
34	1-D	SCREW	NMB 3-6	2
35	1-E	SCREW	NMB 3-6	2
36	3-C	SCREW	NMB 3-6	2
37	3-D	SCREW	NMB 3-6	2
38	4-D	SCREW	NMB 3-6	2
39	4-D	SCREW	NMB 3-6	2
40	4-C	SCREW	NMB 3-6	2
41	5-C	SCREW	NMB 3-6	2
42	5-C	SCREW	NMB 3-6	2
43	5-C	SCREW	NMB 3-6	2



14″ COLOR MONITOR
FRONT RIGHT
K3-950095

5 | 6 | 7 | 8



NO.	INDEX	COMPONENTS	PARTS NO.	Q'ty
1	1-D	RIGHT PANEL	M1-950164	1
2	5-C	FRONT CHASSIS	M2-920629	1
3	3-B	FRONT COVER (1)	M2-920630	1
4	2-E	FRONT METAL	M3-920633	1
5	1-E	VR KNOB	M3-950094	4
6	1-E	VR GUIDE	M3-950095	4
7	2-C	ROTARY KNOB (2)	M4-912735	1
8	4-C	CONNECTOR SPACER	M4-911716	1
9	5-E	FRONT COVER (2)	M4-920631	1
10	3-B	METAL SUPPORT	PNC 8	2
11	4-B	METAL SUPPORT	PNC 12	2
12	5-B	TOUCH LATCH (STRIKE)	TTL-00562	1
13	2-C	LED SPACER	LH-5-10	22
14	5-D	SLIDES RAIL (INNER)	C-203-413	1
15	4-A	SCREW	NMB 3-6	4
16	4-B	SCREW	NMB 3-6	2
17	5-B	SCREW	NMB 3-6	2
18	3-B	SCREW	NMB 2.6-6	1
19	2-C	SCREW	NMB 3-6	1
20	3-C	SCREW	NMB 2.6-10	2
21	4-D	PLANE WASHER	HW 2.6	2
22	4-D	SPRING LOCK WASHER	SW 2.6	2
23	4-D	HEXAGON NUTS	N 2.6	2
24	5-C	SCREW	NMB 3-6	2
25	5-D	SCREW	NMB 2.6-6	1
26	4-D	SCREW	NMB 4-6	2
27	3-D	TAPPING SCREW	NMB-TS 2.6-10	7
28	2-E	SCREW	NMB 3-6	2

A

B

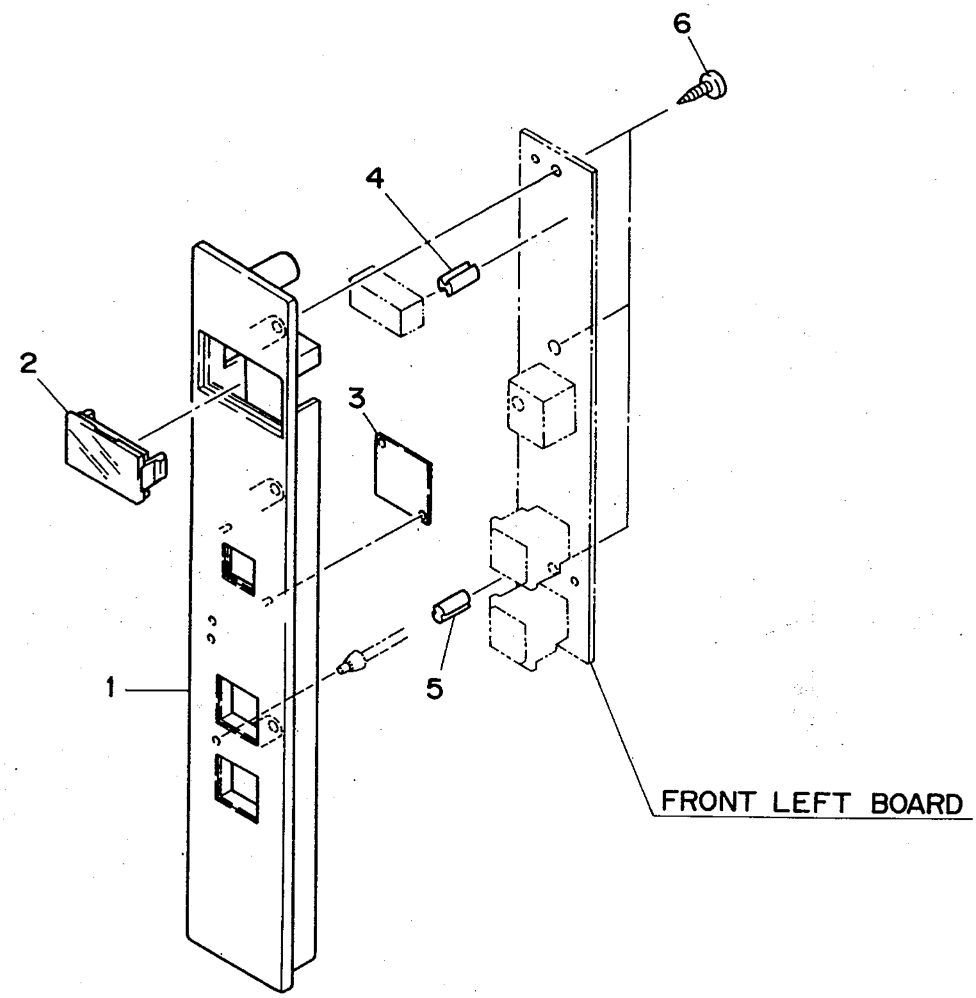
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D

E

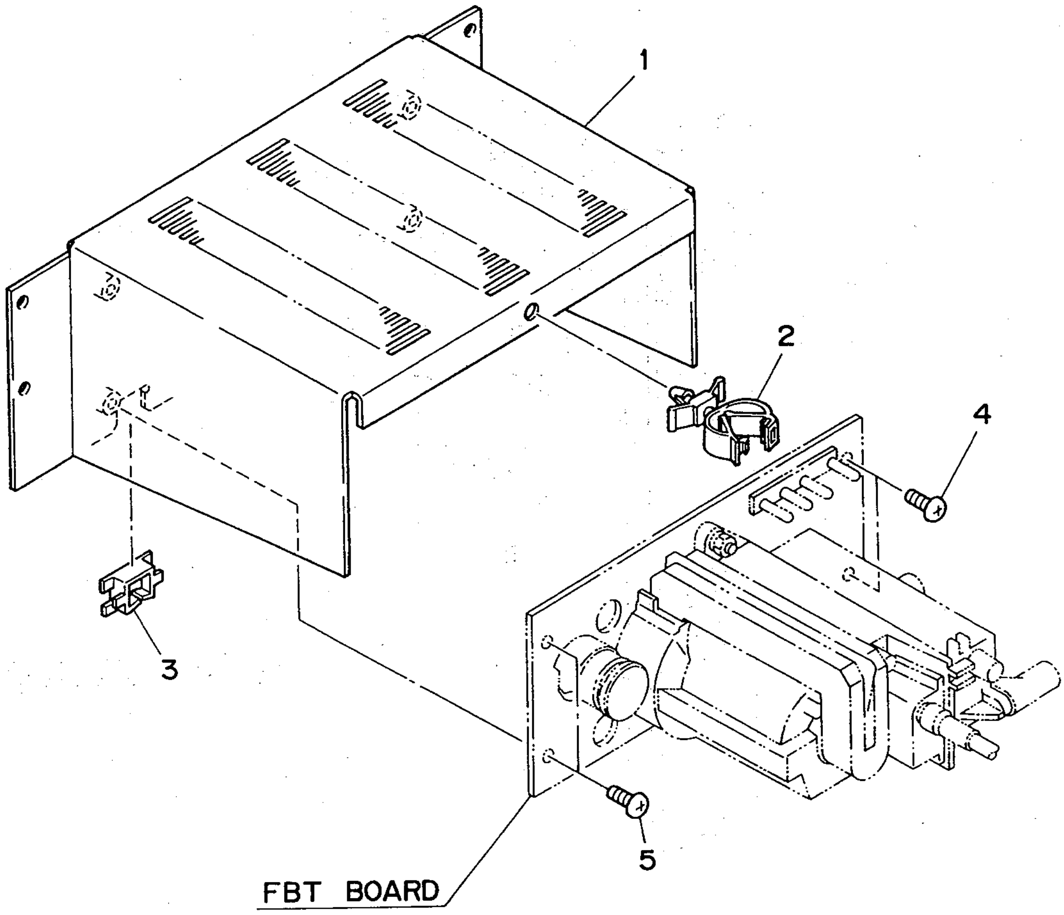
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5 | 6 | 7 | 8



NO.	INDEX	COMPONENTS	PARTS NO.	Q' ty
1	1-C	LEFT PANEL	M1-950153	1
2	1-B	TALLY	M4-909001	1
3	2-B	FILTER	M4-920504	1
4	2-A	LED SPACER	LH-5-5	2
5	2-C	LED SPACER	LH-5-10	3
6	3-A	TAPPING SCREW	NMB-TS 3-10	3

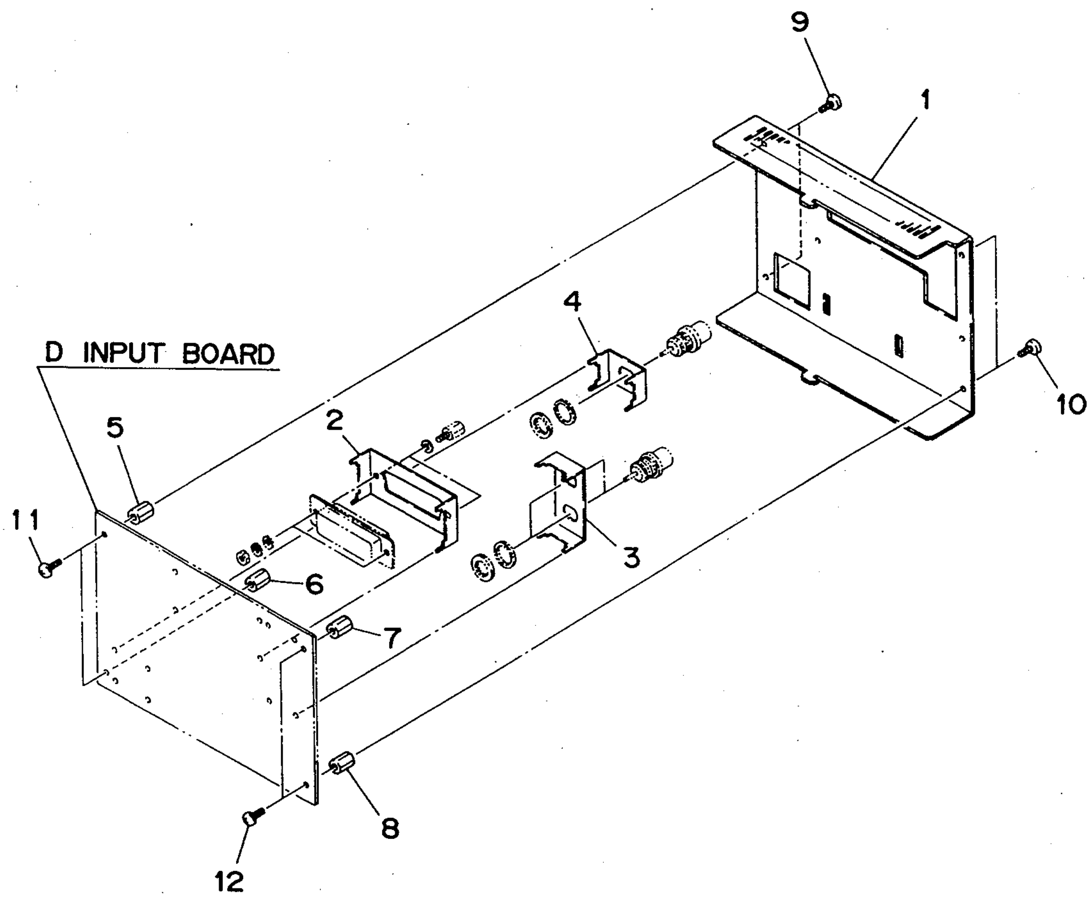
14″ COLOR MONITOR
FRONT LEFT
K4-950096



NO.	INDEX	COMPONENTS	PARTS NO.	Q' ty
1	3-A	FBT BASE	M2-920639	1
2	3-B	SPACE CLIP	VSC-10	1
3	1-C	EDGING SADDLE	EDS-3	1
4	4-B	SCREW	NMB 3-6	2
5	3-D	SCREW	NMB 3-6	2

14″ COLOR MONITOR
HV UNIT

K4-950097



NO.	INDEX	COMPONENTS	PARTS NO.	Q'ty
1	3-A	D INPUT COVER	M3-950365	1
2	2-B	CONNECTOR METAL	M4-950367	1
3	3-C	BNC METAL	M4-950024	1
4	2-B	BNC METAL (2)	M4-950366	1
5	1-B	METAL SUPPORT	PSC 10	1
6	2-C	METAL SUPPORT	PSC 10	1
7	2-C	METAL SUPPORT	PSC 10	1
8	2-D	METAL SUPPORT	PSC 10	1
9	3-A	SCREW	NMB 3-6	2
10	4-B	SCREW	NMB 3-6	2
11	1-C	SCREW	NMB 3-6	2
12	1-D	SCREW	NMB 3-6	2

COLOR MONITOR
D INPUT BOARD PARTS
K4-950083

TM14-20RH/RP
TM20-20RH/RP
TM20-30RH/RP

COLOR MONITOR

Service Manual

First Edition : Jan. 1992
Revised : Sep. 1992
Published in Ikegami Tsushinki Co., Ltd.

- Specifications and design are subject to change without prior notice.

Printed in Japan

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